

THE PREHISTORIC OCCUPATIONS OF BLACK LAKE,  
NORTHERN SASKATCHEWAN

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by

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## ABSTRACT

The results from the archaeological investigations at Black Lake in northern Saskatchewan describe and explain the utilization of the region in prehistoric and early historic times. The 1972 through 1974 survey and excavation programs indicate that the Black Lake area has been occupied by a number of distinct cultural traditions. Typological analysis suggests that this array of traditions and complexes ranged discontinuously in time from approximately 6000 B.C. up to and including the time of historic contact. Cultural affiliations of many of these occupants outline the marginal nature of northern Saskatchewan to a number of physiographic zones. Since post-glacial times the Black Lake area has been occupied by Paleo-Indians, Pre-Dorset peoples, Chipewyan Indians, northern Plains Indians and Woodland Cree Indians.

An extensive amount of historical and ethnographical evidence details the almost total dependence of the historic Chipewyan upon the migratory herds of barren-ground caribou. This information is used to formulate an economic model which outlines this dependence, and tentatively explains the rationale behind the Chipewyan occupation of northern Saskatchewan. This model broadens the understanding of the Chipewyan life-style in the early historic time period and, through application of the direct historical approach, is considered to have limited prehistoric validity.

The majority of cultural materials from Black Lake are associated with the later Chipewyan occupations which

have been tentatively dated from A.D. 1300 to the time of contact. This abundance permits a more detailed analysis which is divided into 2 sections. These sections are concerned with artifact and attribute analysis and with the recognition and interpretation of patterned human behavior from differential artifact clusterings.



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## 1. INTRODUCTION

### 1.1 Introduction

The purpose of the archaeological studies at Black Lake has been to gather information which will result in a description and explanation of the cultural traditions which have existed in this area of northern Saskatchewan. Analysis of the recovered data will lead to an understanding of the rationale behind the locations of prehistoric sites, as well as the cultural affiliations of the occupants of these sites. It is hoped that a more detailed analysis of the material remains from the most important site in the study area will result in a description of the remains, and an explanation of how these material remains relate to the technology of the occupants of the site.

### 1.2 Theoretical background

The methodology underlying this research is essentially guided by the current theoretical debate in archaeology which questions whether archaeology should be the study of culture history, the study of culture process, or somehow, a combination of the 2 approaches. Each view utilizes different theories and methodologies and consequently achieves different results in the study of prehistory.

The 'traditional' approach is essentially a special kind of history. The archaeologist's task is to collect material remains and from them create a reconstruction of past life-ways (Martin 1972: 11). The culture historian

utilizes a normative framework which considers culture to be a body of shared ideas, values and beliefs of a human group. In order for the culture to change it is these 'norms' which have to change. As this change can be either temporal or geographic, the main concern of the culture historians is with the development and construction of time-space charts (Flannery 1972a: 103).

The major criticism of the culture historical approach is that the exclusive concern with the artifact, or the mental template behind the artifact, is inadequate to deal with or explain culture change. While the framework is useful for the purposes of classification, it does not allow the archaeologist to understand why and how cultures change (Flannery 1972a: 103-104).

In an attempt to remedy this situation the fundamental aspects of the traditional approach are replaced by a new set of theories. The main aspects of this new paradigm consist of the use of evolutionary theory, cultural ecology and systems theory. Unlike the old paradigm, this new one can be used to deal effectively with change, social organization, complex ecological relationships, demography, the relationship of material culture to technology, and economics (Leone 1972: 22).

Those of the culture process school view human behavior as existing within a large number of systems. Each system encompasses both cultural and non-cultural phenomena and continued maintenance of a particular way of life depends

on an equilibrium among these systems. Culture change comes about through variations in one or more systems which grow, displace, or reinforce others and reach equilibrium on a different plane. Now, instead of attempting to study the individual and his decisions, the processualist isolates and studies each of the systems as a separate variable (Flannery 1972a: 104).

Cultural ecology has also helped shift major research efforts away from an emphasis on entities and towards a concern with relations. The artifact is not important on its own, but as a mediator between man and his surroundings. The various cultural subsystems (economic, political, etc.) are seen in relation to each other and to the biophysical environment (Watson, LeBlanc, and Redman 1971: 89).

The goal of the cultural processualists is the formulation of deductively drawn hypotheses which are in turn tested against independent data. Confirmed and verified hypotheses may result in the writing of general laws which relate the significance of the archaeological data to past conditions. It is only after all of these procedures are followed that a proper historical framework can be established (Binford 1972b: 120-121).

While these 2 schools represent opposite poles of thought, both the historical and processual approaches are incorporated in the description and explanation of the prehistory of northern Saskatchewan. The nature of the data and, in many cases, the circumstances of its location make

this type of approach feasible.

### 1.3 Thesis format

As a result of the differential theories and methods of analysis used in dealing with the material remains recovered from Black Lake, the thesis is divided into a number of parts.

Part I consists of Chapters 2, 3, 4, 5 and 6. These chapters essentially provide background information, describe the cultural occupations and provide limited explanations as to the rationale of these occupations within the study area. A wide range of data, including archaeological, historical and ethnographical evidence, is utilized in this approach.

The purpose of Chapter 2 is mainly to present some background information on the study area. This information includes a definition of the area, a listing of previous and related archaeological investigations which have relevance to the study area, and a general outline of the methodological approach of the Black Lake Archaeology Project.

Integral to the understanding of human occupation and adaptation within northern Saskatchewan is an understanding of the total ecosystem of the study area. Therefore, a detailed outline of the natural environment is undertaken in Chapter 3. This outline provides information on many aspects of the present environment and also includes a tentative description of the paleo-environment since the time of glacial retreat.

Following this a 'traditional' approach is utilized in Chapter 4 to deal with all of the results recovered during the 3 field seasons. An interpretation of these results includes information on the type, nature, geographical location, purpose and seasonal occupation of all sites recorded within the study area. Also presented in this chapter is a formulation of the prehistoric and historic culture sequence for the Black Lake area. Only certain artifacts (pottery, projectile points, etc.) which can be definitely associated with known traditions and complexes are used to define the cultural traditions of the area. The culture history is based on comparative artifact analysis with existing type categories. This approach is considered useful since almost half of the projectile points were recovered from surface, eroded and disturbed sites and, in all of these cases, only 1 example of each type was found. The inductive generalizations reached are considered to apply most probably only for those particular cases outlined in this thesis.

Comparative artifact analysis with other established cultural traditions indicates that the majority of cultural remains are Neo-Indian and relate specifically to the Chipewyan Indians. In order to gain a better understanding of the various factors affecting Chipewyan existence a systems theory approach is applied in Chapter 5. This approach details a probable economic subsystem for this area of northern Saskatchewan. The purpose of this is to develop

an awareness of the human subsistence requirements which affected the Chipewyan of the late prehistoric time period. This subsistence network, which is dominated by the pursuit of the barren-ground caribou, is considered to be the focal point around which life in the north revolved. The special influence of caribou hunting was of such importance that band structure and mobility were affected by the seasonal movements and distributions of these animals.

Chapter 6 is simply a summary of the results and conclusions arrived at throughout the development of Part I. Additional suggestions and conclusions are proposed concerning the prehistoric utilization of the Black Lake area. Speculations are also made concerning the change and incursion of cultures into this part of Saskatchewan.

For a variety of reasons only 1 site, IhNh 2, can be analyzed in detail. This analysis is contained in Part II of the thesis and is carried out in Chapters 7 and 8. The conclusions from the artifact analysis in Part II are included in the latter part of each chapter.

Chapter 7 deals with artifact analysis and is a combination of 2 approaches. Statistical analysis and tests were to be carried out to determine significant co-variation between and among attributes from IhNh 2 cultural materials. However, this was only possible for certain groupings (such as flakes ) which are numerous enough to make analysis feasible. Since the majority of artifact classes from IhNh 2 contain very few artifacts, only a description of the attributes are



presented.

Chapter 8 is still concerned with artifact analysis but utilizes a processual approach. The exclusive concern of the chapter is with the relations between and within artifacts and groups of artifacts in an attempt to define a possible range of activities at the site. The body of the chapter is based on the assumption that human behavior is patterned and that this behavior is observable in the material remains of the culture (Watson, LeBlanc, and Redman 1971: 63-64). The chapter deals specifically with the cultural remains and features recovered from IhNh 2. It is hoped to correlate the structure of the material remains with the behavioral element of a cultural system which, in this case, relates to Chipewyan occupation.

Chapter 9 concludes Part II and consists of a short section which deals with a number of problems and hypotheses which have resulted from the research and analysis undertaken for this thesis. These suggestions and theories may be of value to future investigations in either the Black Lake area or in the transitional forest region adjacent to the study area.

In total these 9 chapters form the body of the thesis. Part III consists of detailed attribute sheets for some of the diagnostic artifacts recovered during the 3 field seasons. The artifacts on these sheets are included in the typological analysis of Chapter 4 but are not analyzed in a more detailed fashion. Since an attribute analysis is carried out in

Chapter 7 for all of the artifacts from IhNh 2, attribute sheets itemizing the dimensions of these artifacts are not necessary.

None of the remaining diagnostic materials from the other prehistoric sites within the study area are listed on the attribute sheets. As these limited artifacts have no known context or association, they are not analyzed or utilized in any way. When outlines are established which detail the cultural contents of each tradition and complex, these artifacts will become important in an understanding of the culture history of northern Saskatchewan.

## PART I CULTURE HISTORY AND PROCESS

### 2. BACKGROUND

#### 2.1 Definition of area

The location of the area under discussion in this thesis lies between  $104^{\circ} 55'$  and  $105^{\circ} 50'$  West Longitude and between  $59^{\circ} 2'$  and  $59^{\circ} 19'$  North Latitude. Specifically, the study area in northern Saskatchewan consists of the whole of Black Lake (excluding Cree Bay and the Cree River outlet) and a 24 km portion of the Fond du Lac River extending from the lake to the community of Stony Rapids (Fig. 1). This portion of the Fond du Lac River also includes Middle and Stony Lakes. Black Lake itself is a long narrow body of water lying in a general northeast and southwest direction. Its areal extent is as follows: greatest length - 65.6 km; greatest width - 14.4 km; and length of shoreline - approximately 176 km.

Black Lake is situated on the eastern end of the MacKenzie Drainage Basin and the lake drains west through the Fond du Lac River to Lake Athabasca. Four rivers which empty into the lake are the Chipman River from Selwyn Lake in the north, the Peterson River from the northeast, the Fond du Lac River from Wollaston Lake in the southeast, and the Cree River from Cree Lake in the south. Of these rivers the Fond du Lac is the most important, being the fourth largest river in Saskatchewan. The rivers are swift and all are broken and made impassable in sections by heavy rapids and falls.

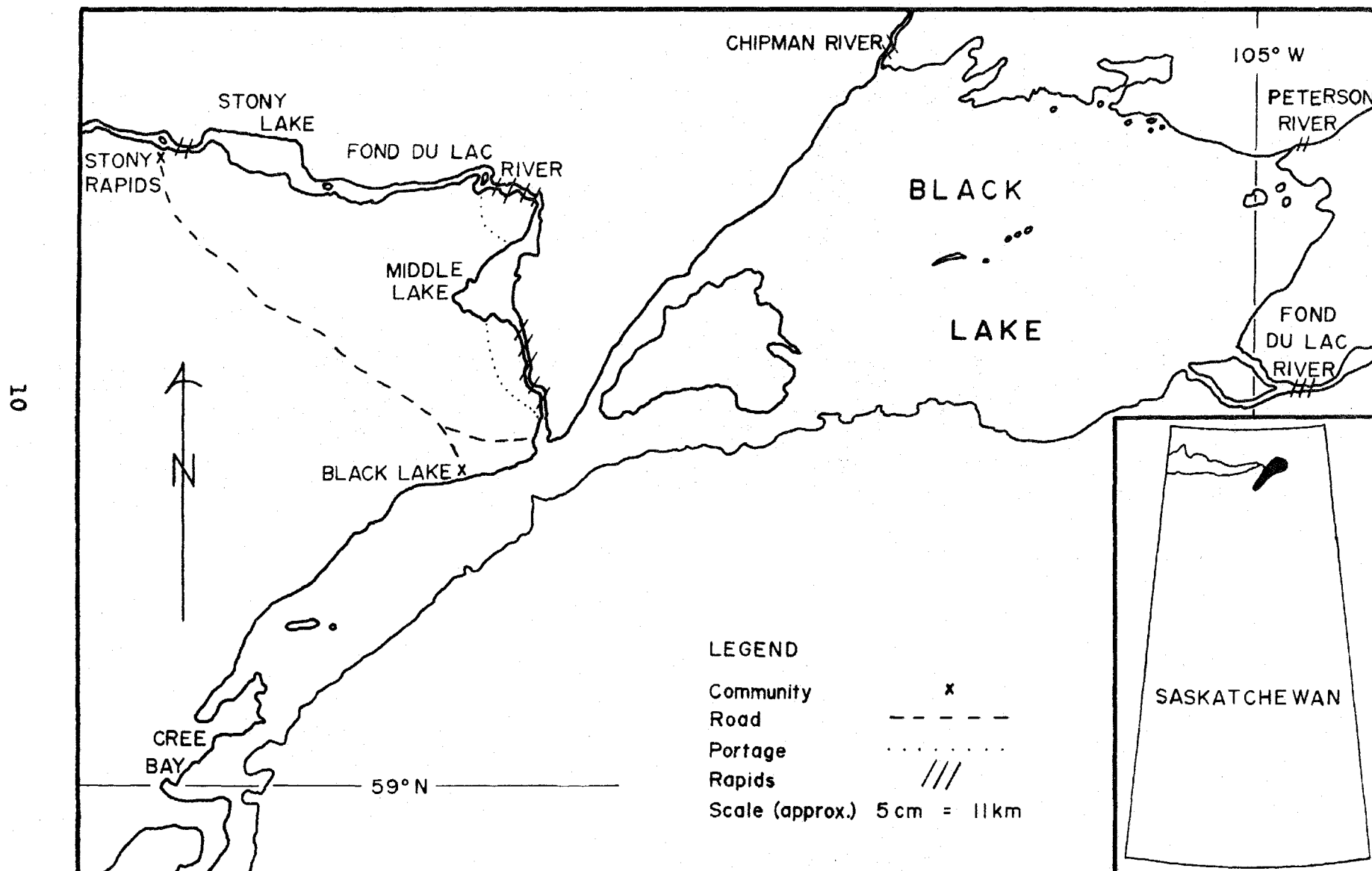


Figure 1. Location and delineation of the study area

## 2.2 Previous and related work

The 1972 through 1974 survey and excavation program at Black Lake in northern Saskatchewan was the first time full-scale archaeological investigations had been carried out in the area. A number of archaeological studies have been conducted in adjoining areas of the Northwest Territories, central and northern Manitoba and Saskatchewan, and northern Alberta. Two of these studies have marginally included the Black Lake area.

The first survey to record sites in the area was by R.S. MacNeish in 1949. The object of his survey was to define the cultural complexes of the area northwest of and including Lake Athabasca. The eastern terminus of the survey was the community of Stony Rapids where a surface site, NWT - 39 (IhNk 1), was recorded. On the day of departure from Stony Rapids, MacNeish touched down briefly at Black Lake and recorded another surface site, NWT - 40 (IgNj 1). The identifiable artifacts were limited from these sites and consisted of a side-notched projectile point, a flake scraper and a few flint chips (MacNeish 1951: 31).

The other survey in the area was the 1955 Moffatt expedition which began on Black Lake, via the Chipman River route, and ended at Baker Lake, District of Keewatin. A number of sites were located but the closest to Black Lake was a surface site, Site 1: Chipman River (IhNg 1), south of Bompas Lake (Harp 1959: 412-414).

While only 2 surveys have included the study area, the

conclusions reached by a number of other archaeological investigations are important and necessary in the explanation of the mainly disturbed and rather limited prehistoric materials from Black Lake. The results from 3 seasons of work at Black Lake indicate that the prehistory of the area has been shaped by a number of distinct cultural traditions. Therefore, in order to understand the prehistory of northern Saskatchewan it is necessary to rely upon the results from a variety of geographically distant investigations.

The most extensive work done in northern Saskatchewan has centered around the Lake Athabasca area. The first recorded work done on the lake was by R.W. Nero of the Saskatchewan Provincial Museum from 1960 to 1963. The prehistoric materials, which were surface collected from the south shore of the lake and the Cracklingstone Peninsula, were analyzed by J.V. Wright and included in the preliminary statement made for the Lake Athabasca area (Wright 1972: personal communication).

In 1971 and 1972, Wright conducted surveys along the northern shores of Lake Athabasca which covered the area from Fort Chipewyan to Macintosh Bay and also included surveys on Martin and Beaverlodge Lakes (Wright 1972: personal communication). A general cultural pattern has emerged for Lake Athabasca and portions of it are relevant to the Black Lake area.

Also of benefit to the development of a cultural sequence for Black Lake are the archaeological surveys from

1966 to 1969 in the central District of MacKenzie by W.C. Noble. Although later survey results and interpretations have led to some modifications of Noble's traditions and complexes, portions of his chronological cultural sequence are still generally applicable to the area under discussion. In particular, the later prehistoric complexes of the Taltchilei Shale tradition (Noble 1971: 113-115) are essential to the delineation and explanation of the Chipewyan materials from Black Lake.

Recent investigations in the District of Keewatin are of importance to the prehistory of northern Saskatchewan. Results from the excavation of the Aberdeen site on the Thelon River by Wright (1972) combined with the conclusions from the extensive barrenlands work by B.C. Gordon (1975) and W.N. Irving's (1968) work south of Baker Lake have established an understanding of human occupation in the barren grounds. While not all of the results can be used, information concerning Paleo-Indian, Pre-Dorset and Chipewyan cultural materials are pertinent to Black Lake.

The work of R.J. Nash (1970) in the transitional forest and tundra zone of northern Manitoba from 1967 to 1971 has produced some preliminary results on the prehistory of that area. Similarities between cultural materials, site types, site locations etc. from both northern Manitoba and northern Saskatchewan are important in the understanding of the Black Lake materials.

Results and interpretations from the work done in the

northern woodlands of Manitoba by W.M. Hlady (1970) are helpful in identifying the limited occupation of Woodland Cree in the Black Lake area.

Useful to a lesser extent are the results from the 1972 and 1973 survey and excavation program carried out at Montreal Lake in central Saskatchewan by M.R.A. Forsman from the University of Saskatchewan. This study provides information concerning the geographic spread of certain artifact types, as well as useful insights into the more southern influences which have affected the Black Lake area (Forsman 1974: personal communication).

## 2.3 Methodology

The first field season of survey and excavation at Black Lake extended from mid-June to the end of August, 1972. A crew consisting of 4 students under the author's direction participated in a systematic search of the shores and islands of Stony, Middle and Black Lakes. Also included in the survey area were the inter-connecting portions of the Fond du Lac River from the community of Stony Rapids east to Black Lake. The southern extent of the survey on Black Lake was the entrance to Cree Bay and the 2 sites found south of the bay were the result of a day trip to that portion of the lake.

All surveying was done by canoe and by foot and the only extensive inland work done was to follow the 2 main portages which join Stony to Middle and Middle to Black Lakes. In order to cut down on travelling time, the crew worked out



of base camps which were set up in the survey area.

The majority of prehistoric sites located were surface and eroded sites. In these cases, all of the recognizable artifacts were collected while a large amount of the detritus was left behind. Test excavations were carried out at a number of sites which appeared to be either partially or completely undisturbed. Testing was implemented by trowel and shovel and all excavation units consisted of 1 or 2 m squares. The majority of cultural remains exposed through excavation were recorded according to depth, horizontal arrangement and soil association.

On the basis of the 1972 survey results it was decided to return to the Chipman River outlet on the north shore of the lake. During 1972, 4 weeks spent at this river outlet resulted in the excavation of 9 square meters at IhNh 1 and 29 square meters at IhNh 2. Analysis of the cultural materials indicated that this area was one of the few places on the lake which had the potential to yield more detailed information concerning portions of the prehistoric culture sequence for this part of the sub-Arctic.

A program consisting of extensive excavation combined with continued survey around the Chipman River was planned for the 1973 field season. The project, which ran from early June through to the end of August, consisted of 3 and at times 4 crew members under the direction of the author.

During June and July extensive block excavation along with additional sampling resulted in the excavation of 132

square meters at IhNh 2 on the west side of the Chipman River. Testing done in 1972 seemed to indicate the presence of a number of distinct traditions and it was felt that further work was necessary in order to understand the occupations more fully.

A grid was aligned with magnetic north and the excavation units consisted of 2 m squares. Excavation was by trowel and occasionally by shovel and trowel, and horizontal and vertical measurements were taken for all cultural materials and features. Bones remaining in the acidic podzolic soils were saved for possible identification. Charcoal remains were rare and little was found associated with hearths or other features. Forest fires occur frequently in this part of the north and distinguishing culturally associated hearth remains from naturally burned roots was always a problem.

During the first 2 weeks of August the crew split into 2 groups. One group conducted an extensive foot survey of the Chipman region while the other tested predesignated areas. Upon completion of the survey, excavations were conducted at IhNh 10, a site which had been located during the Chipman survey. Excavation and retrieval techniques were the same as outlined above for IhNh 2.

During August 1974, the author along with 1 assistant conducted a 1 week archaeological survey along that portion of the Fond du Lac River which flows from Black Lake to Middle Lake. The survey was part of an environmental assessment study requested by the Saskatchewan Provincial Government

in light of a proposed hydro-electric development.

Excavations were limited as the scope of the survey was to locate sites and assess their salvage potential and priority.

### 3. NATURAL ENVIRONMENT

During the past few years, archaeology has made increasing use of the ecological perspective. Frequently, culture is viewed against an environmental backdrop and the systemic nature of man's relations to his surroundings are emphasized (Watson, LeBlanc, and Redman 1971: 89). Thus, knowledge of the environment is basic to any study of man's interaction with that environment.

In light of this approach the following chapter outlines the natural environment of the Black Lake region. The natural environment is here defined as all of the natural circumstances of any place or region in which any organism, including man, lives (Cornwall 1966: 25). The main factors of the present natural environment to be stressed are: bedrock geology, topography, soils, climate, flora, and fauna. A section on the paleo-environment is also included.

#### 3.1 Present environment

##### Bedrock geology:

The following description is based on Byres, Caldwell, and Kupsch 1969.

Underlying most of northern Saskatchewan is a basement complex of ancient rocks that forms part of the nucleus of the North American continent known as the Canadian Shield. This complex is considered to have been formed during the Precambrian Era. However, the altered and highly disturbed condition of most of the rocks, the lack of continuity of

surface exposures and the lack of fossils prevent the formulation and determination of time scales and stratigraphic succession for Precambrian times.

The bedrock geology around Black Lake reflects a number of different processes. The rocks along the east, west and most of the north shore of the lake are igneous rocks (quartz diorite, granite, granodiorite and allied rocks) of volcanic origin. They accumulated as lava flows, ash beds and thick lenses of fragmented rock were blown out during eruptions of explosive violence. Weathering and erosion of these rocks resulted in muds, sands and gravels which were deposited on limited portions of the north and southeast shores of the lake.

For hundreds of millions of years, periods of volcanism and sedimentation, followed by earth movement, deformation and erosion, restructured the landscape so that by the close of the Precambrian the land surface exhibited a complicated pattern of rocks similar to that of today. Late in Precambrian time, or possibly during the early Palaeozoic Era, shallow waters occupied the area south of Lake Athabasca and Black Lake. Streams entering these waters discharged large quantities of sands and gravels resulting in what is now called the Athabasca Formation. This formation is dominated by sandstone, minor conglomerate, siltstone and shale.

#### Topography:

The topographical description of the Black Lake area is based to a large extent on Richards, 1969.

Physiographically, Black Lake lies well within the

Canadian Shield which is defined by features of rough bedrock exposure and wetlands. The area is characterized by steeply inclined to rolling, rough-looking terrain. Rock basins and old drainage channels, with their outlets blocked by glacial deposits are often occupied by water, giving the impression that every depression and basin is liable to be occupied by lake, muskeg, bog or marsh.

The region surrounding Black Lake is divided into 2 discrete sections. The first section is the Rock Knob Complex, which characterizes the Shield in general, with its glacially eroded rock knob and basin terrain underlying rough bedrock exposures. This section defines the north shore of the Fond du Lac River and the north and east shores of Black Lake (Fig. 2). Second is the Athabasca Plains Region which, although still containing rolling terrain and bedrock exposures, consists of sand plains, dunes, moraines and sandy till. This latter area describes the south shore of the Fond du Lac River and the south and west shores of the lake.

The Athabasca Plains Region has been distinguished from the Rock Knob Complex because the former is underlain by sandstones, siltstones and conglomerates of the Athabasca Formation, whereas the latter is an area of metamorphosed igneous and sedimentary rocks. Also, the Athabasca Plains Region is a discontinuous, sandy drift plain in which eskers, drumlinoid features, glacial lake plains and meltwater channels are locally prominent. Extensive areas of dunes

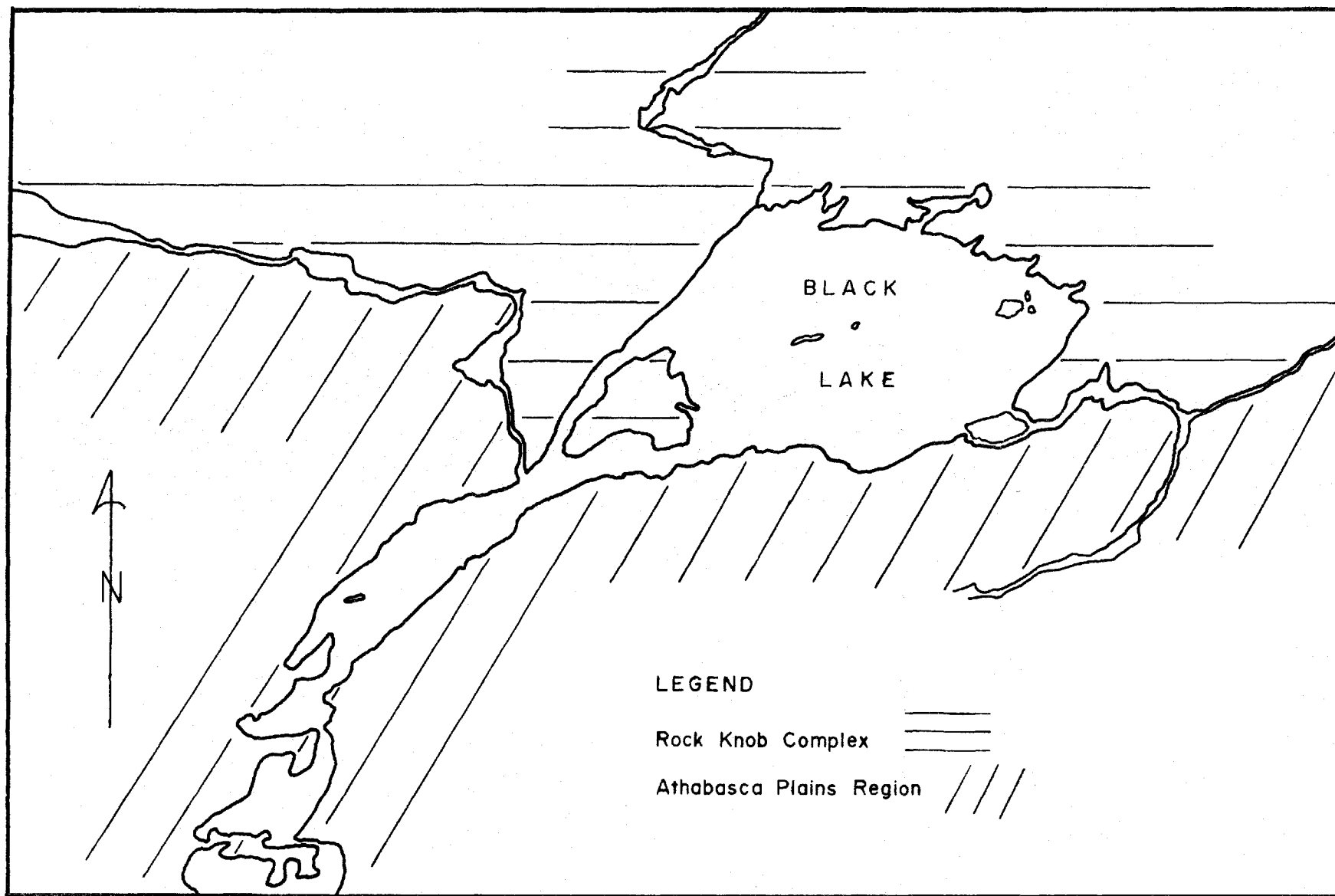


Figure 2. Physiographic divisions of the study area

follow the south shore of Lake Athabasca and extend sporadically along the south shore of the Fond du Lac River to the southern shores of Black Lake.

Black Lake is situated in the eastern end of the Lake Athabasca - Fond du Lac lowland. Relief is low and ranges from 212 m to 363 m above sea level. Local relief rarely exceeds 24 m to 27 m, with the exception of a large fault which parallels and continues past the northwest shore of the lake rising to 121 m at its highest point.

#### Soils:

The soil information for northern Saskatchewan is neither detailed nor accurate and is based on scattered soil samples, as well as on the interpretation of climatic, floral and geologic studies. The following information is taken mainly from Moss, 1965 and Moss and Clayton, 1969.

Black Lake is surrounded by the light coloured podzolic soils which are often associated with forest vegetation. In the virgin state these soils are characterized by surface layers of organic material (L, F, and H horizons) overlying a thin light grey to white mineral (A) horizon, and a bright brown (B) horizon. The parent materials consist of a lime free (C) horizon.

The soils along the north and south shore of the Fond du Lac River and the west and south shore of Black Lake are referred to as dominantly Podzolic with significant occurrences of Organic Fibrisol or deep moss peat. The soil texture is sandy, containing various loamy sands, sands and



gravels.

The soils touching upon the north and east shores of the lake are referred to as dominantly Cryic Podzol (Podzol with frozen subsoil) with significant occurrences of Cryic Peaty Gleysol (Peaty Gleysol with frozen subsoil) and Cryic Fibrisol (deep moss peat with frozen subsoil). The soil texture characterizing these soils is termed mixed sandy and loamy.

The Cryic Podzol soils are very acidic in nature with 51 soil samples from IhNh 2 on the Chipman River having a pH value ranging from 4.4 to 5.7

#### Climate:

Sources for the climatic description have been Bone, Shannon and Raby, 1973, Chakravarti, 1969 and "The Climate of Canada" published by the Department of Transport, 1973.

There are no natural physical features sufficiently prominent in northern Saskatchewan to materially affect the climate of the area. Instead, it is the regions of natural vegetation which serve as an indication of the general climatic regimes. Around Black Lake the boreal and transitional forests are under the influence of Koeppen's Dfc or Cold Snowy Forest Climate.

The annual precipitation for the area ranges from 32.5 cm to 40 cm. Much of the precipitation is concentrated in the summer period with 55% to 65% falling from May to September. Most of this rain tends to fall in heavy, isolated showers and thunderstorms. The thunderstorms are most

frequent between June and August with the peak time being in July.

The total average amount of snowfall ranges from 125 cm to 150 cm in the northern part of the province. Precipitation in the form of snow makes up 35% to 45% of the annual total with the majority of snow falling between October and April. Blizzards are less hazardous and less severe in the northern forests than farther south on the open prairie.

Temperatures in the Black Lake area have a mean annual range of 44°C. During July the normal mean daily temperature is 15°C, while in January the normal mean daily temperature is -29°C. The frost free period is estimated to be less than 80 days a year. The mean date of the first occurrence of frost in the fall is September 5, while the mean date of the last occurrence of frost in the spring is June 8. Ice forms on the smaller lakes about the middle of October and usually disappears about the middle of April. Larger lakes do not freeze completely until about mid-December and are free of ice by about the middle of June.

The dominant winds in the Black Lake area are northerlies and northwesterlies which tend to be much less regular and weaker than those of the south, a result of the forest cover and its sheltering effect. Stations in the forested areas report mean wind velocities from between 8 and 16 kilometers per hour. High velocity winds of 48 to 104 km/h occur from time to time.

The annual total sunshine in northern Saskatchewan

ranges from 1100 to 1200 hours. July is usually the sunniest month with totals around 300 hours, while December is the dulllest month with totals of less than 100 hours.

#### Flora:

Information concerning the flora of the Black Lake area is based on Coupland and Rowe, 1969.

The vegetation surrounding Black Lake is divided into 2 sections which consist of the Northern Coniferous Forest and the sub-arctic Lichen Woodland (Fig. 3). The different zones of forest vegetation in northern Saskatchewan are a result of the varying tolerances and adaptations of the dominant species interacting with the climate and the soils.

The majority of the study area is characterized by Northern Coniferous forest. In this area the sandy soils have favoured the dominance of jack pine (Pinus banksiana) while moist flats and depressions carry stands of black spruce (Picea mariana) and tamarack (Larix laricina). Aspen (Populus tremuloides), balsam poplar (Populus balsamifera) and white spruce (Picea glauca) are found locally along creeks and drainage channels. Three types of birch consisting of white birch (Betula papyrifera), alaska birch (B. neoalaskana), and water birch (B. occidentalis) are also found in the area. The former grows on well drained soils while the latter 2 are confined to poorly drained or moist soils along streams or springs. Alder (Alnus rugosa) is found rarely in relatively wet situations.

Within the Northern Coniferous zone are extensive areas

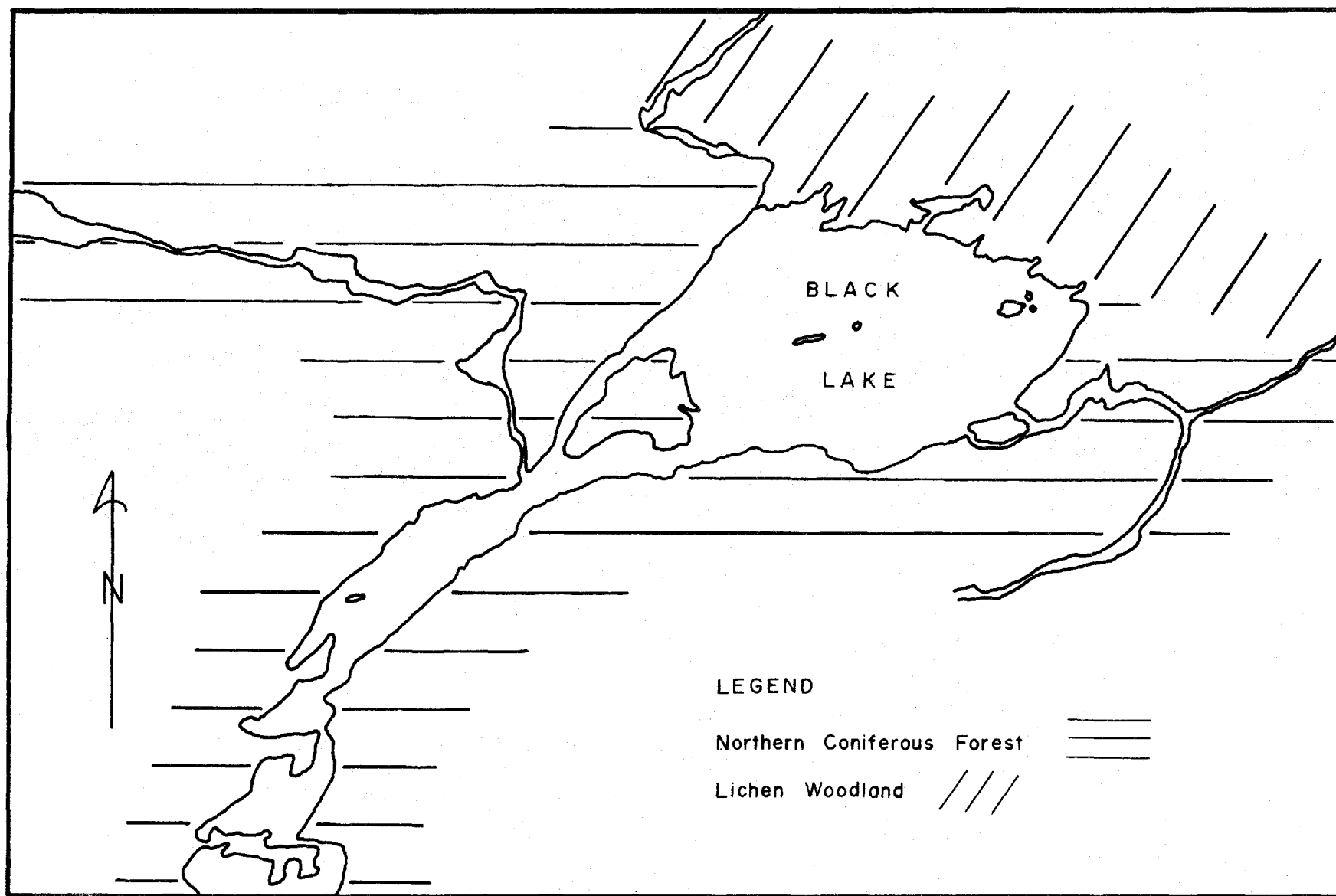


Figure 3. Floral divisions of the study area

of wetlands. Bogs with stagnant and acid surface waters abound in peat mosses (Sphagnum spp.) which may, in time, support open stands of small black spruce and tamarack. Fens, formed through slow water seepage over slopes, are composed of peat forming mosses and sedges. Drier fens are usually characterized by an open cover of tamarack, willow (Salix bebbiana) and birch. Marshes, which occupy silted areas along the fluctuating margins of rivers and lakes, are characterized by sedges, reeds, rushes and cattails. Undergrowth commonly associated with these forests are low shrubs such as Labrador tea (Ledum groenlandicum), hemlock bushes and peat mosses. A variety of grasses and lichens along with wild roses, Indian fireweed and other wild flowers are also present.

The forest stands in the Lichen Woodland are dominated by black spruce and have an open coniferous forest which gives the area a park-like appearance. Often associated with these stands are jack pine and white birch. The open stands have a sparse undergrowth of shrubs and a nearly continuous cover of lichen species in the genera Cladonia, Cetraria and Stereocaulon. In moist depressions, such as valleys or on lake margins, the spruce cover is denser and the undergrowth is dominated by feather mosses, principally species of Hylocomium and Hypnum.

Also found in both the Coniferous Forest and Lichen Woodland are a large variety of berry bushes which often appear to be associated with past forest fires and clearings

caused by historic encampments. The plant types consist of bear berries (Arctostaphylos uva-ursi), pin cherries (Prunus pennsylvania), blue berries (Vaccinium myrtilloides), high bush cranberries (Viburnum trilobum), low bush cranberries (Vaccinium oxycocum), gooseberries (Ribes grossularia), raspberries (Rubus idaeus) and occasionally strawberries (Fragaria spp.).

#### Fauna:

Information concerning mammals in northern Saskatchewan has been taken from Parker, 1972, Maher, 1969, and Cameron, 1972.

There are numerous mammals of economic value found around the Black Lake area. Largest in number are the migratory barren-ground caribou (Rangifer tarandus groenlandicus) which only appear in the study area during the winter. The Beverly and, to some extent, the Kaminuriak Herds winter in northern Saskatchewan from approximately November through April or May of each year. The Black Lake area is virtually the southern terminus for the Beverly Herd and for a variety of reasons there is not always an influx of caribou during the winter season.

A variety of other mammals are indigenous to the area but they are not herd animals and their numbers are considerably smaller than those of the caribou herds. Other mammals in this area of northern Saskatchewan consist of moose (Alces alces), black bear (Ursus americanus), wolf (Canis lupus), wolverine (Galeo luscus), lynx (Lynx canadensis), red fox

(Vulpes fulva), arctic fox (Alopex lagopus), snowshoe rabbit (Lepus Americanus), woodchuck (Marmota monax), porcupine (Erethizon dorsatum), beaver (Castor canadensis), mink (Mustela vison), muskrat (Ondatra zibethicus), otter (Lutra canadensis), fisher (Martes pennanti), marten (Martes americana), ermine (Mustela erminea) and weasel (Mustela rixosa).

Also located in the Black Lake area are a number of squirrels, mice, voles, and shrews, along with a single species each of chipmunk, lemming, bat and myotis.

Information concerning the birds present in the Black Lake area was taken from Godfrey, 1966 and Gollop, 1969.

There are a considerable number of birds which spend at least some portion of the year in northern Saskatchewan. The list of birds has been divided into 2 groups; those which breed in northern Saskatchewan, and those which do not.

Within the former group of birds a number are larger in size and are possibly more culturally important. Birds in this category consist of the American bittern (Botaurus lentiginosus), Common crow (Corvus brachyrhynchos), Common raven (C. corax), Great horned owl (Bubo virginianus), Barred owl (Strix varia), Boreal owl (Aegolius funereus), Great gray owl (Strix nebulosa), Hawk owl (Surnia ulula), Canada goose (Branta canadensis), Golden eagle (Aquila crysaetos), Bald eagle (Haliaeetus ceucocephalus), Marsh hawk (Circus cyaneus), Sparrow hawk (Falco sparverius), Red-tailed hawk (Buteo jamaicensis), Pigeon hawk (Falco columbarius) Sharp-shinned

hawk (Accipiter striatus), Goshawk (A. gentilis), Common tern (Sterna hirundo), Horned grebe (Podiceps auritus), Pied-billed grebe (Podilymbus podiceps), Red-necked grebe (Podiceps grisegena), Mew gull (Larus canus), Herring gull (L. argentatus), Bonaparte's gull (L. philadelphia), Red-breasted merganser (Mergus serrator), Common merganser (M. merganser), Surf scoter (Melanitta perspicillata), White-winged scoter (M. deglandi), Greater scaup (Aythya marila), Lesser scaup (A. affinis), American widgeon (Marca americana), American coot (Fulica americana), Belted kingfisher (Megasceryle alcyon), Shoveler (Spatula clypeata), Bufflehead (Bucephala albeola), Common goldeneye (B. clangula) and the Osprey (Pandion haliaetus).

The smaller birds which breed in northern Saskatchewan are represented by a variety of woodpeckers, sparrows, vireos, swallows, warblers, flycatchers, yellowlegs, blackbirds, thrushes, chickadees, sandpipers, waxwings, and crossbills, along with a single species each of nighthawk, tern, jay, flicker, teal, robin, waterthrush, sora, cowbird, killdeer, kingbird, junco, phoebe, snipe, redpoll, grosbeak, plover, phalarope, siskin, kinglet, nuthatch, sapsucker, tanager, lark, grackle, pewee and dowitcher.

A large number of birds which breed outside of the study area appear in northern Saskatchewan for a short period of time during seasonal migrations. Thus many migratory birds, especially geese and ducks, are plentiful in the spring and fall. Two of the more important birds which breed outside



of, but winter in, the Black Lake area are the Rock ptarmigan (Lagopus mutus) and the Willow ptarmigan (L. lagopus).

Information concerning the fish that inhabit the Black Lake area has been compiled from Atton, 1969.

The fish found throughout the lake consist of Lake trout (Salvelinus namaycush), Lake whitefish (Coregonus clupeaformis), Round whitefish (Prosopium cyclindraceum), Burbot (Lota lota), Cisco (Coregonus artedii), Northern pike (Esox lucius), Walleye (Stizostedion vitreum vitreum), White sucker (Catostomus commersoni) and Longnose sucker (Catostomus catostomus). Arctic grayling (Thymallus arcticus) are located in the area but concentrate around rapids in rivers and at river mouths and outlets.

The Wood frog (Rana sylvatica) is the only amphibian found in northern Saskatchewan (Atton 1969).

### 3.2 Paleo-environment

Generally there is very little information available to provide an adequate description of the paleo-environment of northern Saskatchewan. The tentative chronologies outlined for the northern plains and woodlands are not considered to be applicable to this portion of the Shield.

The pattern and temporal limits of final deglaciation are important in determining the earliest possible period of human occupation in northern Saskatchewan. Scattered information from 2 sources provides 2 possible dates for the north - northeast recession of the ice sheet away from the Black Lake area. A rough map in an article by Bryson and

Wendland (1967: 290-291) indicates that the Black Lake area was still covered by glacial ice by 7000 B.P. The whole of northern Saskatchewan was ice-free by 6500 B.P. as an end result of rapid 'in situ' wasting which had begun ca. 8000 B.P.

A more detailed map in the second source indicates that most of northern Saskatchewan was still covered by glacial ice ca. 9000 to 9900 B.P. The Black Lake area and almost all of the northern part of the province was ice-free by ca. 8000 to 8900 B.P. (Prest 1970: Fig. XII-15). For the purpose of this thesis these dates are thought to set the limits for the beginning of the ice-free period in the Black Lake area. The area under discussion is considered to have been free of ice no sooner than 8900 B.P. and no later than 6500 B.P., although the area was probably fully forested and occupied by a variety of fauna by this latter date.

Limited evidence suggests that the forests spread northwards almost as fast as the ice disappeared, probably even moving into the moraine covered edges of the glacial front. As yet there is no evidence to suggest a tundra, grassland or treeless fringe between the ice and the forest (Bryson and Wendland 1967: 291). However, the treeline has not been moving steadily northward during all of post-glacial time. Climatic and biotic changes since about 3500 B.P. have resulted in large scale fluctuations of the southern and northern borders of the boreal forest (Bryson, Irving and Larsen 1965: 47). The effect of these advances and retreats on the forest cover in northern Saskatchewan is not known

and it is possible that while forest fires may well have destroyed large areas, regeneration has always occurred.

Detailed evidence is not available but it is suggested that the forest cover which advanced into ice-free territory is much the same as the forests which characterize the study area at present. In view of the preceding statement it is also possible that the fauna after glacial retreat were much the same as they are today. However, this may not apply to the barren-ground caribou which may have been adversely affected by the climatic and biotic fluctuations.

#### 4. CULTURE HISTORY

##### 4.1 Nature of sites within the study area

A total of 66 prehistoric and historic sites (including 1 found previously) were located within the study area in northern Saskatchewan (Fig. 4). In order to give an adequate description of the survey results, the total site inventory is divided into historic, burial and prehistoric site categories which are itemized in Table 1. The category concerned with prehistoric sites details the general topographic locations of the sites, as well as the numbers and types of diagnostic artifacts recovered from each site. Detritus or waste material dominated the cultural remains from all of the prehistoric sites and was the only material found at 24 of the sites.

Table 1 - Nature of the sites at Black Lake

HISTORIC SITES:	
IhNk 8	IgNk 6
IhNk 9	IhNj 5
IhNk 10	Historic site at IgN1 6
IhNk 11	Historic site at IhNh 1
IgNk 2	Historic site at IhNh 2
IgNk 3	Historic site at IhNg 1
BURIAL SITES:	
Burial present at IhNj 5	IfNk 2
IgNj 6	Burials present at IgNg 1
IgNj 12	Burials present at IhNh 2

PREHISTORIC SITES:	
Surface sites on rock outcrops	
IfNk 1	IhNk 4
IgNj 5	IhNk 5
IgNj 7 - <sup>+</sup> Biface - 1	IhNk 6 - Core - 1
IgNj 8	IhNk 7 - Wedge - 1
IgNj 9	Core - 1
	Pot Sherd - 1
IgNj 13- *Uniface - 1	IhNj 1
IhNk 2	IhNj 2
IhNk 3	IhNj 3
Surface sites on terraces	
IgNk 1	IgNj 4 - Uniface - 1
IgNk 4	Core - 1
	Pot Sherds - 37
IgNk 5	IhNf 2 - Uniface - 1
Eroded sites on beaches, sand banks and sand ridges	
IgNk 7	IgN1 4
IgNk 8 - Scraper - 1	IgN1 5 - Scraper - 1
IgNk 9	Wedge - 1
	Core - 1
IgNj 1 - Points - 2	IgN1 6 - Point - 1
Point frags. - 2	Scrapers - 6
Scraper - 1	Biface - 1
Biface - 1	Uniface - 1
Wedge - 1	Wedges - 2
Ground Stone - 1	Cores - 2
Cores - 2	Stone Bowl - 1
Pot Sherds - 2	

<sup>+</sup>Biface - may designate a biface, biface fragment or a bifacial edge tool.

\*Uniface - may designate a unifacial edge tool, a uniface or a tool exhibiting use wear.

Eroded sites on beaches etc. (cont.)

IgNj 2 - Points - 2	IgNh 1 - Point - 1
Point frags. - 2	
Scrapers - 7	IgNh 2
Bifaces - 2	
Unifaces - 4	IgNg 1 - Point - 1
Wedge - 1	Scrapers - 4
Cores - 2	Uniface - 1
IgNj 3 - Scrapers - 6	IhNj 4
Wedges - 2	
Ground Stone - 1	IhN1 1 - Point - 1
	Scraper - 1
IgNj 10 - Wedge - 1	Core - 1
IgNj 11 - Point - 1	
Scraper - 1	IhNh 9 - Biface - 1
	Core - 1
IgN1 1 - Scraper - 1	IhNg 3
IgN1 2	IhNf 1
IgN1 3 - Scraper - 1	
Biface - 1	
Core - 1	

Buried sites on waterfront and inland elevated terraces

IhNj 6 - Microblade - 1	IhNh 2 - Points - 16
Scrapers - 2	Point frags. - 7
Bifaces - 5	Scrapers - 86
Unifaces - 15	Bifaces - 30
Wedges - 15	Unifaces - 73
Cores - 3	Wedges - 36
	Cores - 43
	Gravers - 5
IhNj 7	Battering Stones - 5
	Miscellaneous - 2
IgNj 14	
	IhNh 3 - Wedges - 2
	Core - 1
IgN1 6 (buried portion)	
- Graver - 1	IhNh 5 - Scrapers - 2
IhNg 1 - Point - 1	
Uniface - 1	IhNh 6 - Scraper - 1
IhNg 2 - Cores - 7	
	IhNh 7 - Core - 1

Buried sites etc. (cont.)

IhNh 1 - Scrapers - 11  
          Bifaces - 2  
          Unifaces - 2

IhNh 8

IhNh 10- Points - 3  
          Point frags. - 1  
          Scrapers - 3  
          Bifaces - 2  
          Unifaces - 1  
          Wedges - 5  
          Cores - 9  
          Gravers - 2

Historic sites:

None of the historic sites located at Black Lake are directly associated with the time of contact or the early fur trade. The closest documented early historic trading houses are located approximately 96 km west at Fond du Lac (McConnell and Turner 1969: 9). Early French independent traders may have passed through the area or established temporary trading houses but documentary evidence is not available nor has any archaeological evidence been found to support such a theory.

All of the historic sites are evidenced by square and rectangular surficial formations, foundation remains and collapsed basements. The average side of one of these structures is from 4 to 6 m in length. Of the historic sites, only IgNk 2, 3 and 6 and IhNj 5 are associated with trade goods which consist of a variety of copper pot fragments and musket balls. Artifacts from all of the other sites are clearly recognizable as dating from the early to middle 1900's. All of the historic structures appear to be trapper's cabins with the majority being occupied in the late historic

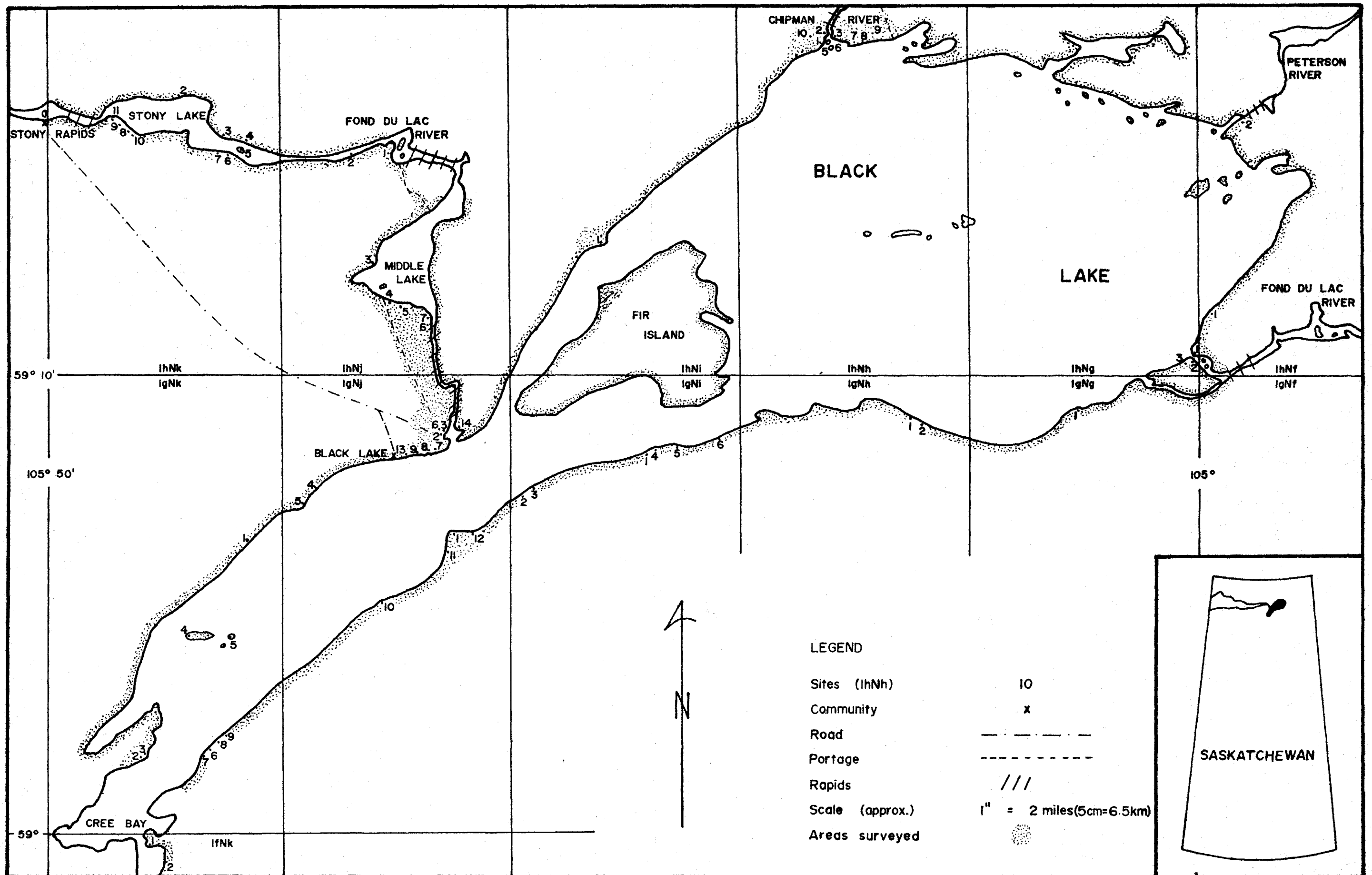


Figure 4. Location of sites within the study area



time period.

Burial sites:

According to information received from residents in the Black Lake area, all of the group and solitary burials recorded are recent. Some of the structures were erected as late as 20 years ago while others were thought to be 80 or, at the earliest, 100 years old. These sites do not include the present graveyards used by the communities of Stony Rapids and Black Lake.

The graves, with the exception of 1 at IhNj 5 and 1 burial at IgNg 1, are evidenced by wooden structures which consist of picket fences, small houses or plain to ornately carved crosses. All of the structures outlining the graves have been constructed with round headed, wire nails. Remnants of blue and green canoe paint are noticeable on almost all of the structures and a single structure at IgNj 6 has recently been completely painted with green paint.

IhNj 5 consists of a rectangular hole (32 cm long; 10.5 - 12.5 cm wide; and 7.5 - 9.5 cm deep) which has been cut into the side of a large jack pine. Residents from the Black Lake community said that this had once been the grave of an infant. The body was placed in the hole, vertical sticks were laid over the opening, and then bound to the tree trunk. Although no dates for this site were mentioned the tree did not appear to be older than 60 to 70 years.

Additional supportive information on this type of burial was located from another source. A traveler in the western

Northwest Territories mentions a woman who was upset because her infant son was being buried in the ground. Apparently she belonged to a tribe (unnamed) who buried their young children in trees. This was accomplished by cutting out a section of the tree which was of sufficient size to receive the body and then closing it up again. The belief behind this practice being that the child would continue to enjoy life through the life of the tree (Stewart 1913: 234).

One of the burials at IgNg 1 is marked by approximately 37 stones placed in a single line which extends for 2.6 m. Wooden rosary beads had been placed at one end in the rocks and the grave is considered to have been very recent.

#### Prehistoric sites:

Surface and Eroded sites- Of the 55 prehistoric sites recorded in the study area, 42 are classed as surface and eroded sites.

Fifteen of the surface sites are located on bedrock outcroppings. This characterizes most of the sites along the Fond du Lac River. Vegetation is usually sparse at these sites and the cultural remains are dominated by quartz detritus. Material remains are often located directly on the rock surface, in small pockets of soil on rock ledges or in crevices, or by scraping through burnt areas such as old hearths. The remaining 5 surface sites consist of areas where small pockets of erosion or recent burns have exposed cultural remains. However, these remains are still limited and are dominated by large amounts of quartz detritus.

The 22 eroded sites are found mainly on the south shore of Black Lake. These sites consist primarily of sand banks, sand ridges and beaches which have been largely disturbed by natural erosion and, in some cases, by late historic occupation. In many cases, the erosion is still active and very little vegetation is found on the sites.

Again the cultural remains are dominated by quartz detritus but a larger number of diagnostic artifacts were recovered from these sites. All of the artifacts recovered are from surface exposures which often cover extensive areas. As such, none of the diagnostic artifacts are found in context nor is any pattern or association recognizable between diagnostic artifacts from the same sites. Test excavations in what appeared to be stabilized portions of the dunes yielded very little material and, in most cases, were completely unproductive.

#### Buried sites-

During the course of the first 2 field seasons, 10 sites were located which seemed to warrant more intensive study on the basis of surface finds and the limited nature of site disturbance. Testing was conducted at all of these sites, but in only 1 case, IhNh 2, was the site considered to be worth more extensive excavation. Data and cultural remains from all of the other sites were either minimal, largely disturbed by historic occupation (IhNh 1) or disturbed through erosion and subsequent redeposition (IhNh 10).

During the short 1974 survey 3 more sites were located

which also fall into this category. Of these sites, IhNj 6 was considered to be worthy of more extensive investigation. However, the nature of the survey did not allow for full-scale excavation and only limited testing could be done.

#### 4.2 Location of sites within the study area

Evidence of prehistoric occupation is found consistently on certain topographic features within the study area. Nineteen sites (34.5%) are clustered around river mouths and outlets. Most of these sites are on the mainland but 5 are located on islands in the river outlets. The second group also consists of 19 sites (34.5%) which are located along the shoreline of the lakes and rivers. Most of these sites are situated on points of land or in sheltered bays or coves. The third major grouping consists of 12 sites (21.8%) which are clustered around constrictions in the rivers and lakes. The remaining 5 sites (9.2%) are divided between island (3) and inland (2) locations. Sheltered islands are of minimal importance in site location, while the scarcity of inland sites is probably a reflection of survey bias. This clustering of site locations is detailed in Table 2.

A functional interpretation of most of the sites is not readily apparent due to the disturbed nature of the site areas, as well as the limited quantities of artifacts recovered. While the data is limited it would be erroneous to simply view all inland sites as winter encampments and all exposed sites as summer encampments. Therefore, the sites within the study area are tentatively divided into a number of

Table 2 - Clustering of sites on general topographic features

River Mouth and Outlet	River and Lake Shoreline	Lake Constriction	Island	Inland
IhNk 3	IhNk 2	IgNk 7	IgNk 4	IhNh 9
" 4	IgNk 1	" 8	" 5	" 10
" 5	IhNj 1	" 9	IhNj 2	
" 6	" 3	IfNk 1		
" 7	" 4	IgNj 1		
IhNj 6	IgNj 4	" 7		
" 7	" 5	" 8		
IgNj 2	" 10	" 9		
" 3	IhNi 1	" 11		
" 14	IgNi 1	" 13		
IhNh 1	" 4	IgNi 2		
" 2	" 5	" 3		
" 3	" 6			
" 5	IhNh 7			
" 6	" 8			
IhNg 1	IgNh 1			
" 2	" 2			
" 3	IgNg 1			
IhNf 2	IhNf 1			

categories which consist of lookout sites, chipping stations, seasonal habitation sites and short-term habitation sites. Evidence concerning the pattern of use is available for a few of the sites and as the majority remain uncertain, most are lumped together in the final category.

Five sites may have functioned as look-out sites and chipping stations. Four of the sites, IhNk 3, 4, 6 and 7 are situated on top of steep rock outcrops while 1, IhNh 9, is on top of a high esker. All of the sites range in elevation from 10 to 20 m above the present day river and lake levels and provide an excellent view of the surroundings. Cultural remains at all of these sites consist of limited but widely scattered detritus and the occasional diagnostic tool. Often, the detritus would be clustered in small concentrations on various parts of the sites. The main function of these sites could have been as a look-out station for game or defence with stone working being a secondary activity.

There is only 1 site, IhNh 2, which is definitely placed in the seasonal habitation site category. Excavation results indicate that the site was occupied primarily by late prehistoric Chipewyan probably as a winter encampment. This assessment is based on a number of considerations. First, that the sheltered inland location of the site is not suitable for spring through fall occupation; second, the excavated faunal evidence pertains to the barren-ground caribou; and third, the wide range and numbers of artifacts suggest long term occupation. That an area could have been continuously occupied throughout the winter months is well documented by early historic traders and explorers. Hearne mentions several times the ability of families to subsist on barren-ground caribou without having to move their tents more than once or twice in a winter (Glover 1958: 49-51).

The short-term habitation sites are considered to be sites which were occupied seasonally on a short-term basis, probably over a number of years. The sites within this group are diverse and have probably functioned in a variety of uses.

Utilization of sites located around the lakeshore could have resulted from a variety of seasonal subsistence activities such as fishing, berry picking, caribou hunting or caribou interception. Cultural remains at all of the sites are dominated by detritus and other signs of chipping activity. Sites which appear to have been sparsely used may represent either isolated kill sites, rest camps, nightly stop-overs or mobilization points for people passing through the area. Certainly the extensively used site areas IgNj 2 and 3, which are situated at the end of a historically known portage to Middle Lake, may indicate in part a mobilization area or rest camp related to travel over the portage. The other sites around the mouth of the Fond du Lac River and the narrowest part of the lake may have resulted either from good fishing or because this area is perhaps the safest and easiest place to cross the lake in a small canoe.

The sites situated around the river outlets probably reflect a variety of uses but it is possible that the main use was the result of good seasonal fishing.

The island sites may represent a more varied seasonal adaptation for either winter or summer camps. Hearne mentions the use of islands as winter camps when crossing frozen lakes

(Glover 1958: 55). However, the majority of islands in the lakes and rivers show no evidence of prehistoric occupation. The few islands which do contain sites, excepting those in the river outlets, appear to have been marginally used. The occupation of islands during any season of the year does not appear to have been consistent.

The 2 remaining inland sites have been sparsely utilized and their functions remain unclear. The sites are high, ranging in elevation from 11 to 15 m above the present day water level, and may have functioned either as look-outs or short-term seasonal habitation camps.

#### 4.3 Culture history

The culture history of the Black Lake area in northern Saskatchewan has been shaped by a variety of distinct cultural traditions. Although the cultural progression is not yet fully understood a rough framework has been formulated. This framework has resulted from comparative artifact analysis and personal communication with a number of the people involved in the formulation of the traditions and complexes which appear to relate to the Black Lake materials. The cultural sequences are outlined in chronological order beginning with the earliest known inhabitants and ending with the historically known Chipewyan or Caribou Eaters.

Only certain artifacts (such as projectile points and pottery fragments) which can be definitely associated with a particular tradition or complex are dealt with in this section concerning culture history. The lack of materials



suitable for dating makes it impossible to provide dates for these diagnostic artifacts. Tentative dates on the basis of similar materials recovered and dated by other archaeological investigations are included in the following section.

None of the other artifacts, with the exception of those from IhNh 2, are mentioned again or analyzed in any way. At this point in time, the miscellaneous artifacts from sites in the study area are not considered to be useful in the understanding of the culture history of the area. Considering the extent of the study area, the number of sites recorded, the scarcity of artifacts, and the lack of artifacts in context from almost 85% of the prehistoric sites, it is not feasible to utilize that data in either a cultural historical or a cultural processual approach.

The sequences of traditions and complexes applied to the Black Lake materials are based on the results of a variety of extensive archaeological investigations conducted in geographically adjacent areas. The terms 'tradition' and 'complex' retain their original interpretations and are defined as follows:

Tradition - "...a distinct way of life reflected in the diagnostic material culture of a series of generically related complexes, which persist through appreciable time and across space."  
(Noble 1971: 104)

Complex - "...the artifacts of a culture at a given time period. A complex has more limited spatial and temporal implications than a tradition." (Gordon 1975: 91)

### Northern Plano tradition:

After final deglaciation the first recognizable occupation in the Black Lake area was by late Paleo-Indian hunters utilizing Agate Basin type projectile points. One basal fragment (Plate 1: 1) has been recovered which, on the basis of similar formal and metrical attributes, is classed as an Agate Basin projectile point. The artifact was located at IhNh 10, a disturbed site situated 11 m above the north shore of Black Lake. The quartzite point has rough parallel flaking, lateral grinding, which is especially marked on 1 edge, and limited basal grinding. No evidence of burination was noted but 1 edge of the fracture had been modified through use wear.

Occupation of this site is estimated to have been between 6000 and 5000 B.C. This estimate is supported in part by other dated specimens of the Agate Basin component. The Acasta Lake site, LiPk 1, has produced the earliest radiocarbon date for Agate Basin materials in the Northwest Territories. Noble has dated these materials at 5020 B.C.  $\pm 360$  (Noble 1971: 104) and 4900 B.C.  $\pm 150$  (Gordon 1975: 92). Other specimens of this tradition have been found in the District of Keewatin, N.W.T., and a number of sites have been tentatively dated by Wright at 5500 to 6000 B.C. (Gordon 1975: 92).

Agate Basin materials have been recovered from northern Manitoba and throughout the Canadian plains but all of these finds have been surface exposures with no dates available.

Radiocarbon dates have been produced for sites in South Dakota and Wyoming and vary from 8400 to 7200 B.C. (Wormington and Forbis 1965: 20). On the basis of the preceding information it seems likely that the late Plano materials in the Canadian prairies may date from 6000 to 7500 B.C.

This data suggests a northward movement of late Paleo-Indian hunters from the plains through the boreal and transitional forests of the Canadian Shield. Gordon (1975: 92) mentions the possibility of "...northerly moving buffalo hunters shifting subsistence to the migratory barren-ground caribou in the wake of final deglaciation in the barrenlands..." and references a number of sources who postulate that the caribou formed the subsistence base of these Paleo-Indian hunters. It is possible that this postulate of barren-ground caribou subsistence may also apply to the early hunters of northern Saskatchewan.

#### Early northern related materials:

After this Paleo-Indian occupation there appears to be a break in the continuity of cultural traditions. It is suggested that this gap will be filled through more extensive field work and is not necessarily the result of absence of peoples. Large scale environmental changes, such as the northward encroachment of the forests to at least 63° North Latitude (Bryson, Irving, and Larsen 1965: 47), may have affected the winter foraging ranges of the barren-ground caribou and sharply curtailed their movements into northern Saskatchewan. However, fish, game and other resources would

still have been available on a year round basis and there is no apparent reason why the area would have been completely avoided.

While definite information concerning the traditions directly following the Paleo-Indian hunters is not available, 3 as yet unidentifiable projectile points may fit within this time span. Two of these points are complete and roughly similar in size, although not in shape. The first point (Plate 1: 2), recovered from IhNi 1, has been manufactured from quartzite and has angular sides while the second (Plate 1: 3), from IhNh 10, is a heavily patinated chert artifact with sides that are convex in shape. Only the point from IhNh 10 shows limited signs of basal or lateral grinding. The 2 points appear similar to artifacts from the Keewatin illustrated by Irving (1968: 37-q,r).

The third point is also from IhNh 10 and is the basal portion of a larger lanceolate (Plate 1: 4). The heavily patinated chert fragment has a considerable amount of grinding on the basal and lateral edges. The fragment is not readily identifiable and could easily be placed in a number of traditions (Wright 1974: personal communication).

This limited data suggests a northern influence from the Northwest Territories to northern Saskatchewan and may infer a continuation of a subsistence system dependent upon the barren-ground caribou. This tentative evidence however, does little to fill the cultural hiatus which presently exists between the late Paleo-Indian hunters and the next

known tradition.

Arctic Small Tool tradition:

The next clearly recognizable occupation in the Black Lake area was by Eskimo peoples of the Arctic Small Tool tradition. The diagnostic artifacts have been classified through similarities in formal attributes with other materials of this tradition. They consist of a pink chert end blade (Plate 1: 5) from IhNh 2 by the Chipman River outlet and a unifacially worked chert microblade (Plate 1: 6) from IhNj 6 which overlooks the Fond du Lac River outlet into Middle Lake. Other artifacts of this tradition have also been found in northwestern Saskatchewan at Lake Athabasca and in northern Manitoba. This evidence along with the Black Lake materials appears to represent the southern terminus of the inland occupation by Pre-Dorset peoples.

In a recent work hypothesizing a correlation between discrete bands and discrete caribou herds, Bryan Gordon (1975) has traced the migrations of the Pre-Dorset people from the arctic coast and islands through the barrenlands, eventually reaching the transitional and boreal forests. The following summary is based largely on his work.

The people of the Arctic Small Tool tradition appear to have had no barrenland ancestors. The arctic maritime sites of this tradition are generally older while the inland sites are later in prehistory reflecting a movement from the north to the southwest. By approximately 1500 to 1000 B.C. the Pre-Dorset peoples had moved inland and were occupying the

northwestern, central and eastern barrenlands. Their subsistence base had altered from one of heavy utilization of sea mammals followed by the occasional musk-ox and caribou, to exploitation of the barren-ground caribou, musk-ox, fish and other resources.

It has been estimated that the occupation of the Beverly Herd area by Pre-Dorset peoples may date from 1200 to 700 B.C. The eventual migration to northern Saskatchewan is thought to have a direct relationship to the winter foraging area of the Beverly Herd and may represent younger sites possibly dating from 800 to 600 B.C. Gordon (1975: 115) suggests that "The proposed abandonment of the arctic coasts due to adverse climatic effects on sea mammal hunting, the harshness of barrenland winters and the possible greater penetration of caribou into the forests may have induced the people to winter..." in the areas of northern Manitoba and Saskatchewan. Subsistence in this winter forage area would appear to have been based on the barren-ground caribou, fish and possibly other resources such as moose.

There are differences of opinion regarding the disappearance of this small tool tradition from the barrenlands and forests. Gordon (1975: 95) suggests that with changing climatic conditions the Pre-Dorset peoples and the Indians south of them may have returned north, resulting in the amalgamation of the Pre-Dorset peoples with the Central Arctic Dorset populations. He bases this theory on excavation results from the upper Thelon River area which show that

homogenous and undisturbed Pre-Dorset materials underlie homogenous and undisturbed Indian materials with no apparent mixing between the 2 traditions. On the other hand, Noble's (1971: 110) final complex of the small tool tradition in the central District of MacKenzie evidences continuities with the preceding small tool complexes as well as with the succeeding complexes of the Athapaskan Taltheilei Shale tradition. His hypotheses to account for these continuities suggest that either the small tool complexes represent a form of proto-Athapaskan culture, or the final small tool complex reflects a blended admixture of Indian and small tool cultures.

Taltheilei Shale tradition:

The next group of recognizable artifacts following those of the Arctic Small Tool tradition are considered to be the products of Chipewyan occupation belonging to the Taltheilei Shale tradition. Through extensive research in the central District of MacKenzie, Noble was able to formulate this tradition which he considers to be distinctly Athapaskan. The 10 successive complexes which make up this tradition range from ca. 200 B.C. to A.D. 1830 (Noble 1971: 110).

The majority of diagnostic materials from the Black Lake area belong to this tradition and evidence more extensive occupation of the area by Chipewyan over any other peoples. Projectile points recovered during the 3 field seasons do not represent all of the complexes but are equated with the Hennessey and Frank Channel complexes.

Surface collection at IgNj 2 on the west side of the lake, resulted in 1 Hennessey point (Plate 2: 1) which is related to the earliest complex of the Talttheilei Shale tradition. This wide stemmed lanceolate with poorly defined shoulders fits easily into Noble's criteria for the Hennessey complex. This complex began around 200 B.C. in the central District of MacKenzie and terminated after approximately 300 years (Noble 1971: 111). Although the material remains are limited, the Hennessey point is thought to evidence early Chipewyan occupation in the Black Lake area.

Gordon (1975: 97) indicates that projectile points representing this complex have been found by a number of researchers over a wide geographic area. Specimens were recovered by Noble in the central District of MacKenzie, by Harp near the Coppermine River and by McGhee on the lower Coppermine River. Other specimens have been recovered in the western District of Keewatin by Irving, and Harp and Wright have found points of the Hennessey complex on the middle Thelon River. Radiocarbon dates associated with 1 Hennessey point from the upper Thelon River are  $405 \pm 80$  B.C. and  $490 \pm 120$  B.C. These dates are at least 2 to 3 centuries earlier than Noble's initial estimate for the beginnings of the Talttheilei Shale tradition. On the basis of these dates it has been suggested that either Noble's estimates are too late or the Hennessey complex first appeared in the south-central barrenlands rather than the central District of MacKenzie (Gordon 1975: 98).



At present there is no evidence to indicate continuous occupation of the Black Lake area by the Chipewyan. The next identifiable group of projectile points recovered are representative of the later Frank Channel complex. Seven corner-removed and side-notched points (Plate 2: 2-8) recovered through excavation at IhNh 2, are similar in size and shape to points outlined for the Frank Channel complex (Noble 1971: 114).

In the central District of MacKenzie, Noble (1971: 114) has radiocarbon dates of A.D.  $1280 \pm 70$  and A.D.  $1410 \pm 95$  for this complex. On the basis of these radiocarbon dates, seriation and beachline chronologies he estimates that this complex falls between A.D. 1300 and A.D. 1500 (Noble 1971: 114). Wright located artifacts of the Frank Channel complex at the Charlot River site on Lake Athabasca and a radiocarbon sample from the site has returned a date of A.D.  $1340 \pm 110$  (Gordon 1975: 103). This latter date suggests that Noble's time period for the Frank Channel complex is also applicable to the Black Lake area. The corner-removed and side-notched points of this complex may represent a continuation of similar point types from the preceding Lockhart River complex. Hence, it is possible that this late prehistoric occupation by Chipewyan in northern Saskatchewan began somewhat earlier than A.D. 1300.

Excavation at IhNh 2 and surface collection at IgNj 1 yielded 5 side-notched, convex base points (Plate 2: 9-12) which are not described in the Taltchillei Shale tradition.

Excavation results suggest that this group of points may be a regional development which is contemporary with materials representative of the later complexes of the Taltheilei Shale tradition. A point with similar attributes and dimensions was recovered from a site in northern Manitoba and has a radiocarbon date of A.D. 1325 (Nash 1974: personal communication). The cultural affiliation of this latter point is considered to be Chipewyan and would seem to qualify the above suggestion.

Prehistoric Chipewyan subsistence is thought to have depended upon the barren-ground caribou with fish and other resources being of secondary importance. A subsistence system of this nature would require the people to make seasonal movements attuned to those of the barren-ground caribou. The ultimate result of such movements would mean that Chipewyan occupation in this area of northern Saskatchewan was primarily in the winter. The extent and range of winter occupation would depend upon the winter foraging range of those caribou which belong to the Beverly Herd.

#### Southern related materials:

Smaller incursions by 2 other cultural traditions during the period of Chipewyan occupation have also minimally affected the culture history of the Black Lake area.

#### Pelican Lake complex:

Surface collection resulted in 1 Pelican Lake point (Plate 1: 7) from IgNj 11 and 1 point (Plate 1: 8) from IgN1 6 which is similar to northern Plains material.

A number of these points have also been found in the central District of MacKenzie by Noble (1971: 107) and along Lake Athabasca by Wright (1972: personal communication). Noble (1971: 107) has tentatively dated this complex in the central District of MacKenzie from around the time of Christ to A.D. 200. Until more conclusive evidence is recovered concerning this incursion of northern Plains hunters, these dates are considered to be applicable to the Black Lake region. It has been suggested that this complex represents a weak influx of hunters from the northern plains of Alberta and Saskatchewan (Noble 1971: 107). Their presence in the Black Lake area is probably the result of hunting forays, possibly involving the barren-ground caribou.

Clearwater Lake complex:

Concrete evidence indicates that the Black Lake area was utilized by Woodland Cree of the Clearwater Lake complex as defined by Hlady (1970: 111-115). This evidence consists in part of a reconstructed portion of a Clearwater Lake Punctate type vessel (Plate 3) recovered from IgNj 4. While the pottery does not fit exactly into the various modes outlined by Hlady, it is still considered to be representative of Clearwater Lake Punctate pottery (Hlady 1974: personal communication).

The remaining evidence for the presence of this complex in northern Saskatchewan consists of 2 projectile point types. Two specimens are small side-notched, square based points (Plate 1: 9,10) with no basal or lateral grinding,

which have been made from chert and quartzite. Both were recovered from IhNh 2 and are representative of Prairie Side-Notched points. The third specimen is a small quartzite triangular point (Plate 1: 11) with no basal or lateral grinding. This artifact was located through surface collection at IgNj 1 and is representative of the Eastern Triangular type. These 3 points have been typed on the basis of formal and metrical similarities with materials of the Clearwater Lake complex illustrated by Hlady (1971: 113, Plate 18).

Traces of this culture are widespread and have been located in Manitoba from Southern Indian Lake in the north to Bell Lake and the Overflowing River in the south (Hlady 1970: 111). Material remains have also been recovered in the Montreal Lake region of central Saskatchewan (Forsman 1974: personal communication). The complex is considered to be recent and associated with late prehistoric and early historic Woodland Cree. The dates of this complex are thought to range from A.D. 1500 to A.D. 1800 (Hlady 1971: 61). Evidence of this late occupation at Black Lake represents a geographical and probably temporal overlap between Woodland Cree and Chipewyan occupations.

This movement into the Black Lake area marks the northernmost penetration of the Woodland Cree. The purpose of this Cree extension is not known but may reflect hunting, trapping or trading forays.

Historic period:

The fur trade and the continuing search for new fur

sources resulted in the earliest recorded information on the human inhabitants of the area later to be known as northern Saskatchewan. The first historical references to the Chipewyan or Northern Indians appear to date from 1689 when Henry Kelsey was sent to contact them for trading purposes (Smith 1971: 23). Although his journey was a failure, later successful trade ventures indicate that the northern transitional forests were seasonally occupied by Chipewyan Indians in pre-contact times.

The trade years with the Chipewyan in the early eighteenth century were not profitable ones for the traders. Initially, too much time had to be spent in teaching the people how to skin and stretch the hides. Also, the general scarcity of fur bearing animals in the transitional region combined with the necessity of lengthy trips to the fort at Churchill, gave the Chipewyan little incentive to trap (Smith 1971: 24). Almost all of their real wants such as "...a hatchet, an ice-chisel, a file, and a knife..." (Glover 1958: 51) were easily supplied with a limited amount of fur.

During the latter part of the eighteenth century, increased competition with the Independent, XY and Northwest companies forced the Hudson's Bay Company to increase exploration and build more trading posts in the interior of the country (McConnell and Turner 1969: 16). This expansion had a direct effect on northern Saskatchewan. In 1796, David Thompson became the first documented explorer to pass directly through the Black Lake area. His search was for

another major trade route which could be used instead of the existing one to the MacKenzie Drainage via the Churchill River and Methy Portage. Thompson's explorations began on the Churchill River and passed through Reindeer, Wollaston and Black Lakes before ending on the eastern end of Lake Athabasca (Hopwood 1971: 133-136). However, the hazards of the rivers offset any trading advantages and the route was never used.

During the early nineteenth century, in a further effort to entice the Chipewyan into the fur trade, trading posts were established on the eastern end of Lake Athabasca. The area was a good fishing spot and was frequented by barren-ground caribou during the winter. The early fur traders encountered many Chipewyan in the area and the decision was made to build posts at that location (Duchaussois 1923: 167). From approximately 1800 to 1804 a Northwest Company post is thought to have been operating at Fond du Lac on the eastern end of Lake Athabasca. Interest in the area renewed ca. 1819 when increased competition between the Northwest and Hudson's Bay Companies led to the establishment of 2 small trading posts on the eastern end of Lake Athabasca. However, when the 2 companies merged in 1821 the eastern establishments were abandoned and trading activity again centralized at Fort Chipewyan. It was not until 1845, when the Hudson's Bay Company reopened a post at Fond du Lac, that regular trading began again in northern Saskatchewan (Bone, Shannon and Raby 1973: 14).

Even though trading houses had been established close to the edges of the transitional forests, not all Chipewyan became involved with the fur trade. Those that did leave the traditional caribou economy behind moved southward to the area between Great Slave and Athabasca Lakes and south of Lake Athabasca to the Churchill River by the end of the eighteenth century (Smith 1971: 25).

The conservative branch which remained on the periphery of the trading economy became known as the Caribou Eaters. These people were first called 'Caribou Eaters' by George Simpson in 1820-1 (Rich 1938: 370-1) and the term eventually became a common one for all Chipewyan east of Lake Athabasca who continued to occupy their traditional taiga-tundra ecosystem. Their almost complete dependence on the caribou for subsistence continued well into the twentieth century (Smith 1971: 26).

By the middle of the twentieth century, trade activity, along with a growing dependence on trade goods, began to result in changes in the economy of the Caribou Eaters. This, combined with the extension of government social services and permanent concentration in villages by the late 1950's and early 1960's, resulted in the rapid loss of aboriginal patterns of subsistence. Even the limited post-contact trapping patterns are of rapidly diminishing importance (Smith 1971: 6).

Archaeological data suggests that the Chipewyan made at least seasonal use of the ecosystem of northern Saskatchewan

in the late prehistoric time period. Historical and ethnological data indicate that the traditional exploitive pattern has persisted until recently among the most conservative of the Chipewyan in northern Saskatchewan. This conservative branch known as the "...Caribou Eaters have continued to occupy and exploit the same territories with which Chipewyan have been identified since earliest historical times, and in the prehistoric past." (Smith 1971: 26).

#### 4.4 Summary statement

Although the cultural materials from Black Lake have been limited it has been possible to reconstruct portions of the cultural historical sequence for this area. This sequence is as yet largely incomplete throughout most of the prehistoric time period. However, it is still apparent that occupation of the area has been by a wide variety of cultures which represent a number of distinct traditions and complexes. Many of these cultural groups have originated in diverse environments and their presence in the Black Lake area indicates considerable movement across space. The tentative cultural sequence for the Black Lake area of northern Saskatchewan is outlined in Table 3.



Table 3 - Tentative cultural sequence for Black Lake,  
northern Saskatchewan

TIME	TRADITION	COMPLEX	CULTURAL AFFILIATION	SITES
1950		Clearwater Lake c.	Chipewyan	IhNh 2
			Woodland Cree	IgNj 4
1500				IgNj 1
		Frank Channel c.	Chipewyan	IhNh 2
1000	Taltheilei Shale t.			IgNj 1
500				
A.D.		Pelican Lake c.	Northern Plains	IgNj 11
0		Hennessey c.	Chipewyan	IgNj 6
B.C.				IgNj 2
500				
	Arctic Small Tool t.		Pre-Dorset	IhNh 2
1000				IhNj 6
1500				
2000				
2500	Possible			
	Northern			
3000	Related		Meso-Indian	IhNi 1
				IhNh 10
3500	Materials			
4000				
4500				
5000				
	Northern Plano t.		Paleo-Indian	IhNh 10
5500				
6000				

## 5. CHIPEWYAN SUBSISTENCE MODEL

Archaeological and historical evidence presented in the preceding chapter suggests that Chipewyan Indians have dominated and consistently utilized the Black Lake area during the late prehistoric and historic time periods. A considerable amount of evidence, consisting of historic and ethnographic data, has been compiled on the Chipewyan and their traditional adjustment to the taiga-tundra ecosystem. This adjustment appears to have focussed primarily on the migratory barren-ground caribou and the purpose of this chapter is to outline the relationship between the Chipewyan and the caribou herds. In order to achieve this goal a model will be formulated which demonstrates how the socio-territorial organization of the Chipewyan has been affected by the caribou. Evidence indicates that this model is historically valid and through application of the direct historical approach, it is also assumed to have a limited range of prehistoric validity. Such a model is considered to be essential to the understanding of Chipewyan prehistory and considerably broadens the interpretation of prehistoric adaptation to the Black Lake area of northern Saskatchewan. The application of this model is based on analogous studies of caribou/human interaction, rather than on evidence solely derived from the archaeological project at Black Lake.

Archaeological, historical and ethnographical evidence clearly indicates that procurement of the barren-ground caribou was the single exploitive pattern which governed

most aspects of Chipewyan socio-cultural and socio-territorial organization. The importance of this animal to occupants of northern environments cannot be overestimated. The Chipewyan themselves have recognized their specialized relationship with the caribou and have said "...that in the recent past "they lived like the caribou,"..." (Smith 1971: 2). There is linguistic similarity with the word for 'caribou' (etθen) being synonymous with the word for 'flesh' (tθen) (Smith 1971: 11) and the historic name 'Caribou Eater' further indicates the lifestyle and dependency of these Chipewyan hunters. The majority of Chipewyan relied on the migratory barren-ground caribou for their very existence.

Recent investigations by the Canadian Wildlife Service have shown that the barren-ground caribou are actually made up of 4 major herds. The Bluenose, Bathurst, Beverly and Kaminuriak Herds are discrete units which only partially overlap. This overlapping occurs between the latter 2 herds within their southern winter foraging ranges.

The caribou range extends from the barrenlands or tundra to the transitional forests or taiga. Except under certain conditions, such as severity of winter or population increase, they do not penetrate very far into the full boreal forest. The only exception to this is the area immediately south of Lake Athabasca where winter caribou dispersions overlap with the woodland caribou of the boreal forest. In general, the summer range is on the tundra while the winter range is in the northern portion of the transitional forests (Smith 1971: 13).

An understanding of the migratory and nomadic behavior of the barren-ground caribou is important when considering human dependence on the animal. According to Smith (1971: 14-15), the large seasonal migrations which last 4 months of the year are followed by seasons of relative dispersal and nomadic behavior within the general range. During the late winter and short spring season (late April to early June) the caribou begin to migrate from the southern winter range in the taiga to the calving grounds in the tundra. During the calving period the pregnant females are relatively concentrated while the males, other females and yearlings are more widely dispersed. After the calving period is over the females and their calves join the rest of the herd. The caribou are nomadic and gregarious during this part of the summer on the tundra with the males having the widest distribution. From late August to the end of September the caribou form in herds just beyond the treeline, occasionally penetrating into the forest. Here the rut occurs in late October, after which the caribou move rapidly into their winter range in the taiga. During occupation of the winter range, which begins by November or early December, the herd may be distributed over a wide area. However, the major portion of the herd tends to be concentrated in a much smaller zone or series of foraging ranges with the bulls ranging widely and the females staying closer to the forest edge. Movement of these animals during the winter is largely determined by the herd's population and by conditions of

climate and forage availability. Towards the close of winter the caribou move towards the treeline, forming large but loose aggregates. By late April and early May, the migration to the calving grounds and occupation of the summer range begins again.

Of the 4 main herds it is really the winter range of the Beverly Herd, and to some extent that of the Kaminuriak Herd, which have important implications for the Black Lake area (Fig. 5). The Beverly Herd calves in the Keewatin at Beverly Lake, but winters within the treeline generally south of Great Slave Lake to Lake Athabasca, Black Lake, Wollaston Lake and sometimes south of Lake Athabasca. The winter range of the Kaminuriak Herd is in northern Manitoba and Saskatchewan and overlaps with the winter range of the Beverly Herd. Under certain conditions, both herds may even extend as far south as the Churchill River. The winter distribution of these 2 herds corresponds to that of the Chipewyan during the contact period (Smith 1971: 16).

Accounts by the early traders and explorers, especially those by Samuel Hearne, outline the almost total dependence of the Chipewyan upon procurement of this single species of game. Not only did caribou provide the majority of the diet but the hides, antler and bones were used in a variety of ways. Spear points, fish hooks and other implements were fashioned from bone and antler while the hides were made into clothing, lodges, "...thongs to make netting for their snowshoes, snares for deer, sewing for their sledges, and,

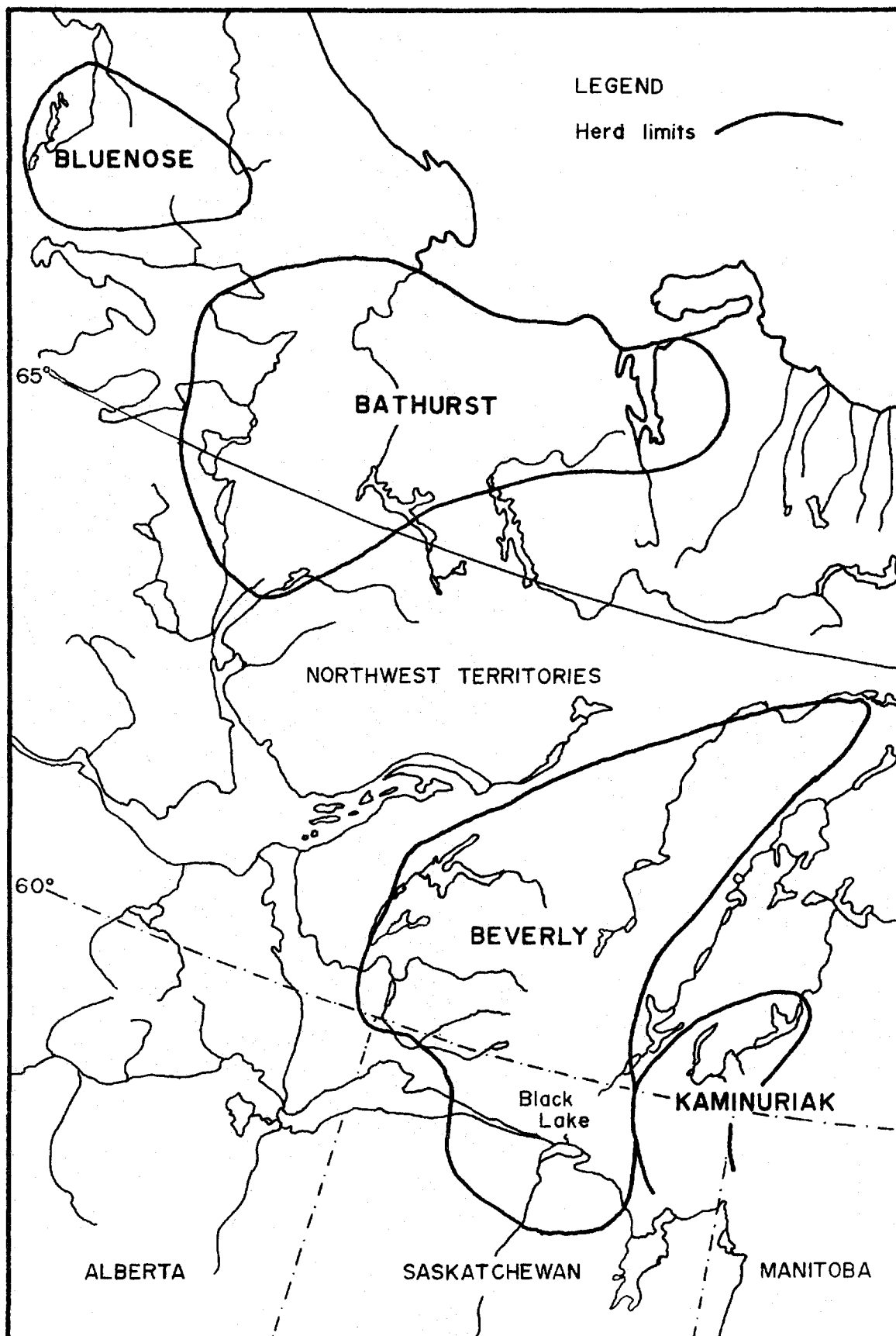


Figure 5. Barren-ground caribou herds - late winter and spring distribution (Thomas 1969: 36)

in fact, for every other use where strings or lines of any kind are required:..." (Glover 1958: 128).

A tentative estimate suggests that an average of 150 caribou per year would supply a family with most of their needs (Parker 1972: 75). However, at this point it seems impossible to estimate the number of caribou used for food. The caribou carcass was not always used completely and Hearne mentions that when the caribou are plentiful the Indians kill large numbers of them daily and only consume choice morsels, such as the tongue, while the rest of the carcass is left to rot (Glover 1958: 75). Smith (1971: 17-18) suggests that from earliest historical times until the recent decline of the herd numbers induced government intervention, the Chipewyan took the caribou for granted. The great herds were considered to be an unchanging resource to which little thought had to be given.

Smith (1971: 18-19) indicates that the major food supply for the year was supplied through large communal hunts at the great migrations which took place in the early winter and spring. Secondary hunting of the caribou occurred during the winter and summer, whenever supplies ran low or fresh meat was desired. The hunting methods utilized were determined largely by the seasonal movements and concentrations of the caribou, as well as by seasonal food and hide requirements. Hunting methods vary from large communal hunts with pounds and snares, to the use of bows and arrows and spears. During the summer and winter distribution of the herds over a wide

area, the caribou were frequently hunted by 2 or more men using bows and arrows. Since the caribou are slower and more vulnerable in the water, they were also often speared from canoes as they crossed rivers or narrow lakes in the summer range.

Although the numbers of caribou utilized for food are not known, there is a limited amount of evidence which tentatively indicates how many animals were needed for hide requirements. The number of caribou needed were large and Hearne estimates "...that each person, on an average, expends, in the course of a year, upwards of twenty deer skins in clothing and other domestic uses, exclusive of tent cloths, bags, and many other things which it is impossible to remember, and unnecessary to enumerate." (Glover 1958: 128). Hearne states that "It requires the prime part of the skins from eight to ten deer to make a complete suit of warm clothing for a grown person during the Winter..." (Glover 1958: 127). Smith estimates that 8 to 12 hides were required for the same set of adult's clothing, with extra needed for summer clothing, leggings and mocassins. In addition to clothing, hides were needed for the babiche strings, lines and netting. Finally, one of Smith's informants states that 40 to 50 hides were required for a reasonably large lodge (Smith 1971: 12).

Since caribou does not provide very strong leather, most articles made from caribou hide were replaced annually. The abundance of caribou made replacement easy and Hearne



reports that the Indians were able to kill great numbers of them daily, simply for the sake of the skins. The hides used for clothing and tent coverings had to be made from caribou that were killed in August and September. After this time the hair on the skins becomes too long and so loose in the pelt, that it will drop off at the slightest injury (Glover 1958: 127). Hides procured at this time of year are still thick and not marred by the warble flies. Hearne states that skins can be procured from early August until the middle of October "...for when the rutting season is over, and Winter sets in, the deerskins are not only very thin, but in general full of worms and warbles; which render them of little use, unless it be to cut into fine thongs..." (Glover 1958: 128). During the time when the caribou were hunted for their hides they were still in their summer range on the tundra.

Up to this point the general development of the chapter has emphasized the dependence of the Chipewyan on the caribou. It should be noted that besides the caribou there were a variety of other animal and plant procurement systems of seasonal and regional importance that may have been of value to the Chipewyan. During the summer range of the caribou on the tundra, fishing and hunting of musk-ox, bear, birds and smaller mammals was possible. Of these animals, fish are considered to have provided the Chipewyan with variety in diet and were second to the caribou as a source of food. Berries were available during the latter part of summer but

floral sources are not thought to comprise much more than 3% to 5% of the diet. The remaining 95% to 97% is thought to be predominantly meat with a small amount of fish (Gordon 1975: 27).

Within the taiga and in the Black Lake area potential systems of faunal procurement appear to be more abundant. Besides the fish, numerous birds, bears, and other smaller animals, the area is inhabited by widely varying populations of moose. However, Hearne states that the Chipewyan consider moose meat to be "less substantial" than meat from the caribou and gives the impression that moose were not valued as a food source by the Chipewyan (Glover 1958: 158). Again, the area contains a variety of edible berries which would not have been utilized by the Chipewyan if they were on the tundra during the summer. The area provides bountiful fishing and numerous historic sources mention the importance of the northern Saskatchewan area as a fishing spot for Chipewyan. While fishing and other food sources may have been important during certain times of the year, caribou is still considered to have been the single most important food source. Smith (1971: 8) suggests that the caribou could have provided 90% or more of the Chipewyan diet and concludes that rarely has a society been so dependent upon a single species.

In his comprehensive study of the specialized dependence of Chipewyan on the barren-ground caribou, Smith (1971: 3) suggests a number of hypotheses which are of interest to this thesis. First, the major socio-territorial divisions

of the Athapascans were based on the exploitation of caribou herds; second, that the regional bands were based on specific migration routes and foraging ranges; and third, that the size, composition and exploitive pattern of the bands were related to the seasonal patterns of caribou congregation or dispersal.

In a further elaboration of this discrete herd/discrete band hypothesis, Gordon (1975) also outlines the unique dependence of human bands upon caribou herds. Since the bands depended so heavily on certain caribou herds, human movement would tend to be restricted to discrete herd routes and forage areas. The lengthy distances between the migration routes of the major herds would allow little communication or movement between herd areas. Depending on the extent of the prehistoric ranges, band communication and interaction may only have been feasible within the winter ranges of the Beverly and Kaminuriak Herds.

The geographic range of those Chipewyan later to become known as the Caribou Eaters, paralleled the annual cycle of the migratory and nomadic movements of the Beverly and Kaminuriak Herds. Survival meant that fluctuations and movements of the caribou herds were followed by the movements of the human bands or groups.

According to Smith (1971: 74-79) although the Chipewyan population was greatly reduced during historic times, the organizational principles of the groups do not appear to have been affected. The largest groups of people within each herd

area consisted of the regional bands. These large composite bands consisted of related and unrelated families and did not have a long term, stable core of members. These bands were the largest groups of people that lived together for any length of time. The size of these seasonally variable bands often numbered more than 200, and groupings of 400 to 600 individuals have been documented. The regional band did not have clearly defined territories but rather a range based on caribou migration and foraging areas that tended to be exploited by the band. Since this range had a tendency to vary there was no development of the concepts of ownership or territoriality. The size and membership of the regional band was highly variable and large aggregations of people were only possible during periods in which caribou movements or concentrations made communal hunting possible and productive.

The regional band was in turn divisible into small local bands which consisted of several extended families. These extended families are domestic groups which consist of siblings, their spouses and children and/or parents and married children. These groupings were highly variable and could range from a single extended family to 50 or more individuals. The local band became a functional unit during those periods of the year when caribou dispersal necessitated a corresponding dispersal of the regional band.

The composition of both the regional and local bands had considerable flexibility and it was possible for the extended family to shift from one local or regional band to

another. These choices are made available by the bilaterality of the kinship system and the potential alliances of affinal relationships. This flexible organizational pattern of the Chipewyan is the result of an adaptation to the various seasonal concentrations and dispersals of the barren-ground caribou.

In light of the preceding information it is possible to construct a tentative model of Chipewyan subsistence and organization. Parts of this model are considered to be generally applicable to seasonal camps of the Chipewyan who have occupied the Black Lake area and utilized the Beverly Herd for subsistence.

During October the barren-ground caribou concentrate just beyond the treeline for the rutting season. After the breeding activity is over the great fall migration into the taiga winter range occurs. This rapid migration extends from late October to early November and makes large communal hunts by the Chipewyan possible. Pounds are constructed or re-used along one of the known migration routes generally north of the winter range. These migration routes are often consistently used over long periods and tend to be well known to the Chipewyan. Camps would have been situated in close proximity to the pounds or on high look-outs where caribou movement and direction would have been detected in time to direct the herd into the pound. Once enclosed within the pound the caribou were killed with spears or by bows and arrows. The object of the drive was to provide enough food

to last until the next migration. The scope of these communal hunts was often so large that regional bands of approximately 400 or more individuals were feasible. Such a large task also implies a level of leadership and co-ordination which was much stronger during these communal hunts than during other times of the year.

From late November or early December through to April, the caribou winter in the taiga. Although the caribou do range over a wide area, the main portion of the herd is generally concentrated in one or a series of foraging areas. Larger local bands of hunters were possible around these major foraging areas while smaller units of hunters would be required for those animals that were widely dispersed. Hunting of the sub-herds was usually by pounds, snares or bows and arrows, while hunting of the dispersed animals was by bows and arrows and snares. During some winters adverse conditions such as poor forage areas, or extreme snow depth or hardness could have caused the caribou to disperse over a larger area. Under these circumstances human bands would also disperse and only smaller bands, perhaps ranging from an extended family to 50 individuals, would be feasible. Again, these smaller bands hunted principally with bows and arrows and snares.

During April the pregnant females, non-pregnant females and yearlings move towards the treeline and cluster in large, loose aggregates in preparation for the migration to the calving grounds on the tundra. By the end of April and

early May, these animals are migrating northwards although only the pregnant females travel as far as the calving grounds. Calving begins by early June and the peak has passed by the middle of June. During the movement prior to calving and the calving period, the bulls are still dispersed throughout the winter range. Generally the Chipewyan pursued these animals along with other forest animals rather than the cows and yearlings. Since the bulls were not in herds the Chipewyan were organized in smaller local bands utilizing hunting methods suitable for smaller groups of hunters. By mid-June the bulls leave the treeline and begin a slow migration which appears to follow the northward retreat of the snow. Again during the migration, which usually follows traditional routes, large scale bands and communal hunting for major food supplies becomes possible. Continued seasonal migration along traditional routes probably meant that the hunters themselves utilized traditional camping areas or interception points.

During the summer range on the tundra the caribou are nomadic and widely dispersed from June to the end of July. From this latter date to mid-August the mid-summer migration occurs and the caribou move generally southwards towards the treeline in discontinuous aggregates. Due to the wide distribution and fluidity of the aggregates the hunters are organized in smaller local bands during the summer. The bow and arrow is utilized with spears being especially effective at water crossings. By late August and during September the

caribou begin to congregate near the treeline in preparation for the breeding season. Throughout August and September the primary purpose of caribou hunting was to provide enough hides for the year ahead. At this time hunting for food was secondary to the need for hides. After the rut in October, the herds migrated southwards to the winter range in the taiga and the annual cycle began again.

The general reliability of this subsistence pattern has been well documented and Hearne suggests that the Northerners "...by always following the lead of the deer, are seldom exposed to the griping hand of famine, so frequently felt by those who are called the annual traders." (Glover 1958: 52). However, it should be mentioned that even though the migration routes tended to be predictable there was always the chance of major deviations in this cycle which could cause hardship and starvation to the people. The total number of caribou varies and an inadequate number of caribou, or even none at all, may follow a known migration route. There is also the possibility of a 35 year cycle of herd growth and decline (Smith 1971: 70) which will in turn affect hunting returns. Severe winter conditions and excessive snow depth or hardness could affect the time and direction of movement as well as the area of distribution. The availability of adequate foraging conditions in both winter and summer also affected the movement and spread of caribou.

Of particular importance to the winter range of barren-ground caribou are the effect of forest fires usually caused



by thunderstorms. According to one source, forest fires have direct unfavorable consequences on the winter range of the caribou (Scotter 1968: 8). Extensive areas and limited corridors of burn form barriers which the caribou do not like to cross and can turn or halt the migrations. Because the fires tend to divide the preferred winter habitat into isolated fragments, areas of winter range may be avoided even though they contain a large proportion of desirable forage.

After a fire in the taiga, several decades are required for the fire destroyed 'reindeer' lichens to reach their former abundance (Scotter 1968: 85). While some forest fires are small and burn only a few hundred acres, others have been known to destroy well over one hundred thousand acres before they are controlled or extinguished by natural means. The extent of the fires combined with the length of time required for adequate regrowth may result in considerable damage to the winter range of the caribou herds. The effects of forest fires are estimated to have been a principle cause of decline in caribou herd numbers. It should be noted however, that while fires decrease the area of caribou winter range they increase the rangeland of moose which prefer the earlier stages of forest succession (Scotter 1968: 82).

The basic adaptation of the Chipewyan has not been to a single environmental zone but to a single animal species whose range cross-cuts several environments. This information, along with the seasonal range of the caribou, suggests that the occupation of the Black Lake area by Chipewyan was

primarily in the winter. The occupation coincides with the winter range of the Beverly Herd and may represent the southern terminus of the major herd range. As such, it is suggested that the Chipewyan occupation of Black Lake relates to hunting of the foraging sub-groups or of the more widely dispersed males. Hunting along the major seasonal migration routes would have occurred farther north before the herds reached their winter range. This is not meant to imply that the study area was utilized continuously on a seasonal basis by the Chipewyan. Various pressures affecting herd size and movement may have meant that Black Lake was not occupied by caribou or hunters for several decades at a time. However, while using the area the bands may have returned to past campsites or interception points on a seasonal basis.

Not all Chipewyan sites in the study area are thought to be related exclusively to the caribou. During a severe winter, or if for some reason caribou hunting was unproductive, the Chipewyan may have been relying on procurement systems other than that of caribou. There is also no reason to suggest that a few families did not remain in the transitional forests on a year round basis, focussing on other procurement systems rather than following the caribou.

It has been suggested that earlier prehistoric cultures throughout the Canadian north may have also depended upon the caribou for subsistence. The work by Bryan Gordon (1975) in the barrenlands has done much to establish that this discrete band/discrete herd hypothesis is also applicable to

the inland occupation by the Pre-Dorset peoples of the Arctic Small Tool tradition. It is possible that the Pre-Dorset occupation of the Black Lake area represents seasonal utilization of the barren-ground caribou. Although much testing and verification is still necessary, the other earlier cultural traditions of the Black Lake area, which relate to northern cultures, may also evidence a subsistence system dependent upon the barren-ground caribou.

## 6. CONCLUSIONS

Archaeological evidence indicates that the Black Lake area of northern Saskatchewan has been occupied by a wide array of distinct cultural traditions. Evidence for these traditions is often limited and as yet appears to be somewhat discontinuous in nature. Some of these prehistoric occupations are thought to have been on a seasonal basis and related to the winter range of the barren-ground caribou, specifically those of the Beverly Herd.

The initial human occupation of the Black Lake area appears to have occurred shortly after glacial retreat. Limited but concrete evidence indicates that late Paleo-Indian hunters of the Northern Plano tradition were present in this area of northern Saskatchewan. Although radiocarbon dates for the early vegetation of this area are not available, Black Lake is thought to have been ice-free as early as 6900 B.C. or as late as 4500 B.C. This latter date is considered to be too late and it is suggested that the Paleo-Indian hunters may have occupied northern Saskatchewan between 6000 and 5000 B.C.

Limited evidence has been recovered which tentatively suggests that after this Paleo-Indian occupation the Black Lake area was at least minimally occupied by cultures associated with more northern traditions. This evidence, which has not yet been clearly identified, suggests a subsistence system based on the barren-ground caribou. This evidence however, does little to bridge the extensive gap

which now exists between the Paleo-Indian occupation and the occupations of the next clearly recognizable tradition.

The next identifiable occupation relates to Pre-Dorset peoples of the Arctic Small Tool tradition. The inland presence of these people is thought to be the result of a migration from the arctic coast and islands. In northern Saskatchewan this tradition may date from approximately 800 to 600 B.C. (Gordon 1975: 182) and possibly represents the southern terminus of inland penetration by Pre-Dorset peoples.

Following the close of the Arctic Small Tool tradition is the appearance of Chipewyan Indians of the Taltheilei Shale tradition. Evidence for this tradition is discontinuous and relates to the early Hennessey complex and the much later Frank Channel complex. These occupations in the Black Lake area have been tentatively dated at 200 B.C. to A.D. 100 and A.D. 1300 to 1500 respectively. Other evidence, which may represent a regional variation in Chipewyan material culture, also suggests that Chipewyan Indians were occupying northern Saskatchewan during late prehistoric times. Further historic and ethnographic evidence indicates that Chipewyan Indians have continued to occupy the Black Lake area throughout the historic time period.

Concurrent with these complexes of the Taltheilei Shale tradition was occupation by Indians from the northern plains of Alberta and Saskatchewan and the central woodlands of Saskatchewan and Manitoba. Limited evidence suggests the presence of hunters representing the Pelican Lake complex.

This incursion is considered to be short-lived and has been tentatively dated to around the time of Christ. Much clearer evidence indicates the northward movement of Woodland Cree of the Clearwater Lake complex into the Black Lake area. This occupation is considered to have been late in prehistory and to have occurred at Black Lake within a time span ranging from A.D. 1500 to 1800.

The preceding cultures outline the cultural succession of the Black Lake area. There are a series of gaps within this framework, some of which cover a considerable time period. It is suggested that these gaps are not the result of absence of peoples but rather the result of limited research. At this time there is no apparent reason why northern Saskatchewan would have been avoided for such extensive periods of time. More research in the area should narrow some of these gaps.

The presence of such a wide variety of cultural traditions, which originated in diverse geographic locations, indicates the marginal nature of the Black Lake area to a number of physiographic zones. It is suggested that the occurrence of such diverse traditions are in part a reflection of climatic changes which have taken place during the prehistoric time period. Climatic fluctuations, which in turn affect the total ecosystem, may well have affected the hunting and habitation range of prehistoric peoples. Changes, which may have adversely affected the range of a species as important as the barren-ground caribou, could have resulted in large

scale occupation of an area not previously utilized.

Variation in climate causing extremely severe conditions could well have been the event which caused the Pre-Dorset peoples to move inland from the arctic coast. A reversal and improvement in climatic conditions could explain the sudden disappearance of this tradition from the inland regions.

The majority of cultural materials from the Black Lake area are related to late prehistoric occupation by Chipewyan Indians. Extensive evidence which includes ethnographical, historical and archaeological data, clearly indicates that these Chipewyan hunters were almost totally dependent upon the barren-ground caribou for survival. So important was this exploitation of caribou, that it governed many aspects of the socio-cultural and socio-territorial organization. The heavy subsistence requirements, combined with the need of caribou hide for clothing and lodging, created an almost total dependency upon the barren-ground caribou. While it is usual for certain plant and animal genera to be culturally more important than others, it is rare for a lifestyle to depend so completely upon a single species of animal.

It is probable that Chipewyan occupation in this area of northern Saskatchewan is the result of adaptation to the Beverly Herd. Black Lake and the area east of Lake Athabasca form the southern terminus of the winter range for this herd. Accepting the discrete band/discrete herd hypothesis as valid, it is suggested that the Chipewyan occupation of Black Lake relates primarily to the winter range of the Beverly Herd.

Larger hunting groups were possible around the sub-herd foraging areas while smaller aggregates of hunters could have pursued the more widely dispersed males. Since the foraging areas and routes between foraging areas tended to be well known, it was possible for camps to be occupied on a continuous seasonal basis. This continuous seasonal occupation of camps may have also been possible for the extended family or groups of families who hunted those caribou with a wider winter range.

With the coming of spring and the spring migration back to the summer range, the Chipewyan moved northwards following the lead of the caribou. Those Chipewyan who wintered in northern Saskatchewan would have spent the summer on the barrenlands, possibly around the Thelon River. The occurrence of similar types of quartzite between Black Lake and Aberdeen Lake represents limited evidence in support of this theory. After the breeding season the fall migration takes the caribou southward into the winter range. It is suggested that the large communal hunts, which are feasible during these great seasonal migrations, occurred farther north than the Black Lake area. The pounds and other enclosures would have been erected along one or more of the migration routes before the caribou had reached the winter foraging areas or had dispersed throughout the winter range. If pounds were utilized within the winter range they were probably on a smaller scale and used mainly when the sub-herds moved to fresher foraging areas. Hunting in the winter range was by the bow and arrow, small



pounds, snares and spears.

The foregoing account explaining the presence of Chipewyan in the Black Lake area is considered to represent optimum conditions. The occupation of the transitional forests by Chipewyan family groups during the winters was subject to a variety of pressures. Severe climatic conditions affecting the caribou range, the effects of forest fires or the decline in herd numbers, may have meant that caribou were not always present in the Black Lake area. Seasonal occupation by the Chipewyan was probably not continuous and the region may have been unoccupied for several decades at a time, if not longer. However, extreme conditions may have forced the Chipewyan to rely upon other resources in the region. It is also possible that a certain number of Chipewyan remained permanently within the transitional forests. Fauna indigenous to the area is plentiful enough to permit year round occupation by smaller numbers of people.

A considerable amount of evidence clearly associates the Chipewyan with a barren-ground caribou subsistence system. However, such clear evidence is not available for the other cultural traditions of the Black Lake area. Evidence suggests that the Pre-Dorset peoples also relied on the caribou (Gordon 1975) although possibly not to the same extent as the Chipewyan. Pre-Dorset reliance upon this migratory species may explain the incursion of this tradition into northern Saskatchewan. It is suggested that the caribou has played a major role in most prehistoric subsistence patterns in the north. The

presence of such a large potential food source may also have caused the limited movements by the more southern plains and woodland cultures.

Evidence of cultural occupation in the study area was located consistently around river mouths, on points of land or in sheltered bays, and at river and lake constrictions. The majority of these sites have no known cultural affiliation and are thought to have resulted from a variety of seasonal activities. Sites may have been used for rest camps or mobilization points, fishing, berry picking, caribou hunting, caribou interception or look-out stations possibly connected with hunting. While most of the sites indicate some form of occupation only one suggests a long term period of occupation. IhNh 2 has been interpreted as a winter occupation by late Chipewyan Indians with caribou forming the subsistence base.

Archaeological investigation of the Black Lake region in northern Saskatchewan has resulted in the rough formation of a prehistoric cultural succession for the area. The culture history of Black Lake indicates the presence of a number of diverse cultural traditions. Some of the occupations, such as those by the Woodland Cree peoples, have greatly extended the range of cultural traditions into an area where such occupations were not previously suspected. The occupation of Black Lake appears to have been long and varied although at this point, it is still not completely known.

## PART II ARTIFACT ANALYSIS

During the 1972 and 1973 survey and excavation program at Black Lake it became apparent that IhNh 2, on the north shore of the lake, was the most important site in the study area. Because of the large site area, the generally undisturbed nature of the site, and the large variety of cultural materials still in context, it is possible to conduct an analysis of cultural patterning within IhNh 2. Therefore, the following 2 chapters will be concerned exclusively with the cultural remains from IhNh 2. The site analysis is divided into 2 parts. Chapter 7 is concerned with artifact and attribute analysis, while Chapter 8 is concerned with the detection of patterned behavior from artifact groupings.

The purpose of these chapters is to describe the various artifact classes as well as to determine whether any significant correlation occurs between or within these artifact classes. This kind of description and analysis is presented in an attempt to understand some of the elements of the material culture subsystem and how this subsystem reflects the behavior patterns of the prehistoric occupants of IhNh 2.

## 7. IhNh 2 - ARTIFACT DESCRIPTION

### 7.1 Introduction

Before attempting to describe the cultural remains it is necessary to present some background information on IhNh 2. The site is located on the west bank of the Chipman River outlet, approximately 140 m inland from the north shore of Black Lake (Fig. 6). Site elevation ranges from 1 to 4 m above the river level and the area of the site is approximately 150 m long by 60 m wide (Fig. 7). Block excavations covering an area of 74 square meters were carried out on the central and highest portion of the site which yielded the greatest density of cultural remains. Over the rest of the site sampling was conducted which resulted in the excavation of 87 square meters.

Approximately 9,600 culturally associated lithic materials have been recovered from excavations at IhNh 2. The vast majority of these lithic materials consisted of shatter and detritus (93.1%), followed by flakes (3.7%), with diagnostic artifacts (3.2%) making up the smallest group. The distribution of these materials is not even over the site and the majority (78.2%) were recovered from the block excavation while the rest (22.8%) were recovered from the other parts of the site. A large number of stones (averaging 10 cm X 10 cm X 5 cm) were associated with the lithic materials. The average per 2 meter square was 29 from the block and 12.7 from the other parts of the site. However, most of these stones were generally dispersed and little patterning

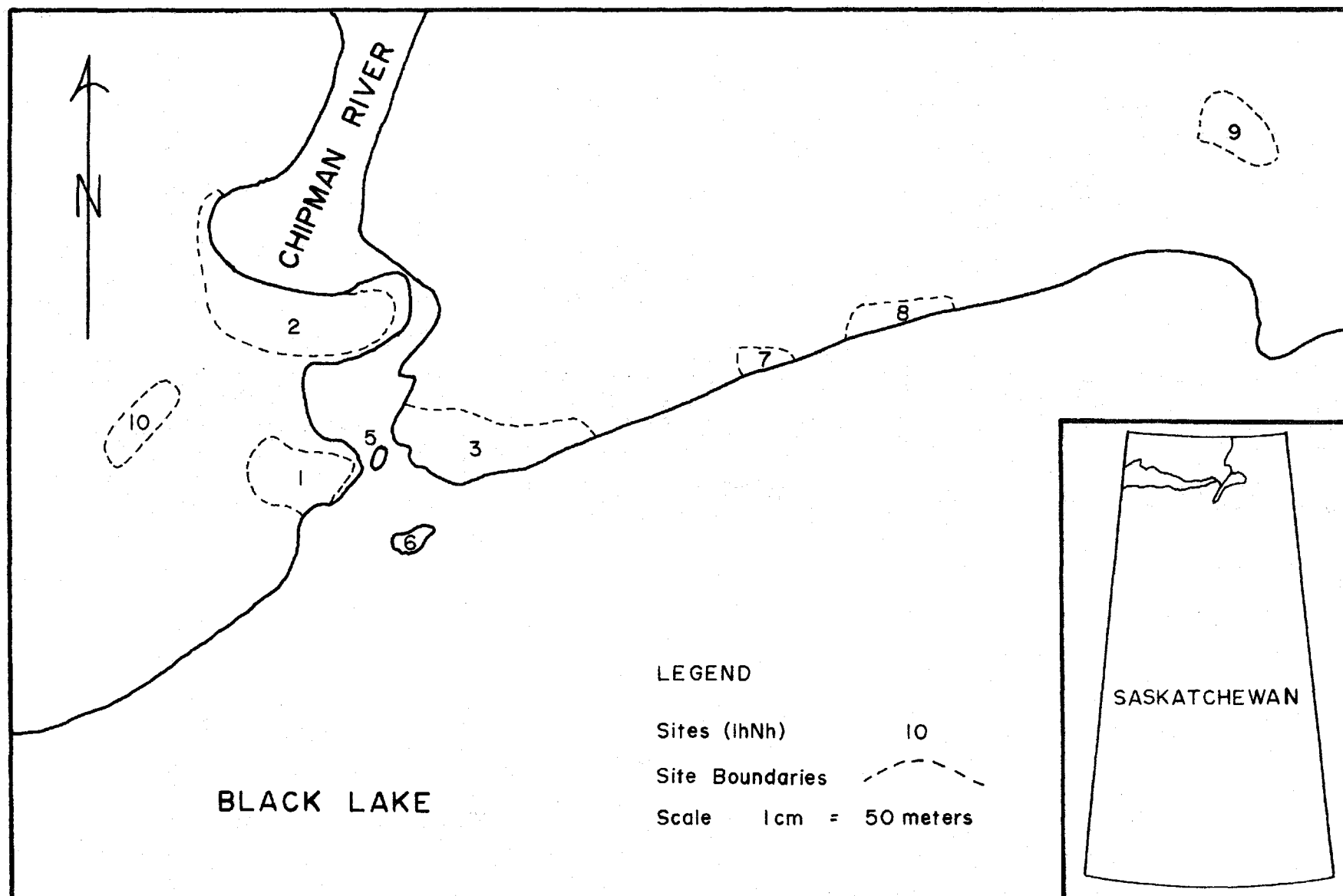


Figure 6. Location of sites at the Chipman River outlet

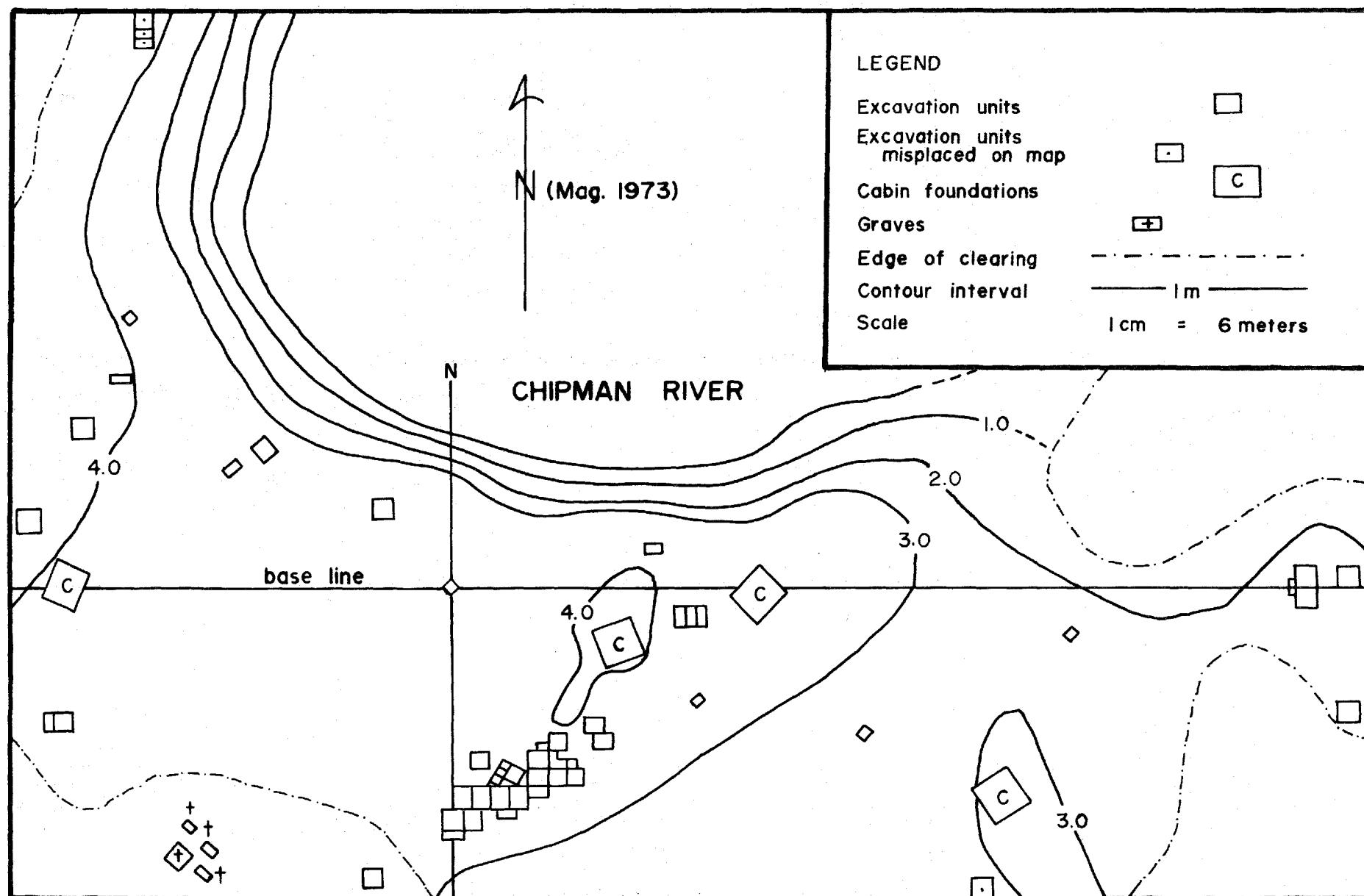


Figure 7. IhNh 2 - Site map

was noticeable. All of this data suggests that the block excavated portion of the site was used more consistently or for a longer period of time than were other parts of the site.

Clearly the large majority of detritus represents a group of data with potential for analysis. However, subsequent studies to delineate divisions or clusterings within these cultural remains were mainly unproductive. The cultural material ranges from the surface to 36 cm below the surface, with the majority of remains concentrated from 2 to 16 cm below the surface. Extensive analysis of the vertical and horizontal positions produced few significant clusters, groups or divisions of any kind. Occasionally a division was detected which would appear to be a stratigraphic break, however, these 'breaks' were not continuous and were usually restricted to a very limited area. The shatter within each excavation unit appeared to be widely and often evenly dispersed and minimal relations within this group of materials were apparent. Even analysis concerned with the separation and plotting of primary and secondary shatter was without results. Given the present methods of analysis, the majority of shatter at IhNh 2 appears to be useless in artifact analysis, as well as in attempting to pin-point culturally defined activity areas.

In light of the preceding information the analysis in this chapter will concentrate on all of the diagnostic artifacts and flakes from IhNh 2. These specimens are limited in number and consist of 303 artifacts and 357 flakes. In

turn, the diagnostic artifacts are broken down into major artifact classes which are listed below in Table 4.

Table 4 - Artifact classes and frequencies from IhNh 2

Artifact Class	f	%
Projectile points	23	7.6
Scrapers	86	28.4
Bifacial tools	30	9.9
Unifacial tools	73	24.0
Wedges	36	11.8
Gravers	5	1.7
Hammerstones	5	1.7
Cores	43	14.2
Miscellaneous	2	0.7
Total	303	100.0%

The procedure of formulating artifact classes consists of a general process of ordering materials into broad categories on the basis of a number of re-occurring attributes. By way of example, all projectile points exhibit a number of attributes which consistently differentiate them from all scrapers or all bifaces. Many of the artifact classes can be sub-divided into a number of varieties. Each variety consists of artifacts which are more similar to each other with respect to certain attributes than these artifacts are to other varieties. Statistical verification of the consistent association of co-occurring attributes would result in the delineation of types.

In many cases there are not enough artifacts in each



class to warrant anything more than a general description of the artifact attributes. However, for some of the major classes such as scrapers, wedges and cores a more detailed artifact analysis is feasible. With a larger number of specimens in each group the analysis is considered to more adequately describe the probable range of variation. Whenever possible, descriptions of the artifact classes include individual measurements of the specimens. In cases where too many artifacts would make this process cumbersome, the widest range of measurements along with the mean ( $\bar{X}$ ) of the measurements are listed. Only with the larger category of flakes is a statistical analysis possible.

Artifact analysis of the Black Lake materials has been hampered by the lack of context and cultural association for the majority of artifacts. This problem is also encountered to a certain extent with the cultural remains from IhNh 2. The site contains cultural materials from at least 3 distinct traditions which reflect Pre-Dorset, Chipewyan and Woodland Cree occupations. At this time only the projectile points can be associated with the individual cultures. These occupations did not occur in separate areas on the site but appear to be mixed, which has resulted in a mixture of the artifacts. As yet, most of the artifacts cannot be seriated or separated to associate with any of the 3 occupations. Therefore, it is not possible to analyze the artifacts for each separate occupation and then compare the results. Unless it is obvious by artifact variety or material type that the

artifacts can be culturally differentiated, all of the artifacts in each class are analyzed as a group. It is suggested that since the projectile point varieties are predominantly related to the Chipewyan, the majority of other artifact varieties may also belong to this occupation. Materials related to the Pre-Dorset and Woodland Cree occupations appear to be limited and the conclusions of the artifact analysis may be considered to be representative of late Chipewyan materials.

## 7.2 Diagnostic artifacts

### Projectile points (23):

Projectile points were weapon tips which were hafted to the shaft of an arrow or spear. They were used in the killing of game and if necessary for defense purposes. End blades are included in this definition and refer to points associated with Arctic assemblages.

The artifacts within this class consist of 1 complete end blade, 9 complete points, 4 base fragments, 2 mid-section fragments and 7 tip fragments. Varieties within this group are represented by lanceolate points, side-notched and corner-removed points, and side-notched points.

#### End blade (1)

This variety contains a single, small pink chert implement with a concave base, slightly serrated edges and no lateral or basal grinding (Plate 1: 5). Measurements are as follows: length - 27.3 mm; maximum width - 10.3 mm; distance maximum width from base - 14.5 mm; and maximum

thickness - 3.9 mm.

The artifact is representative of the Arctic Small Tool tradition and indicates an incursion by Pre-Dorset peoples into northern Saskatchewan possibly dating from 800 to 600 B.C. (Gordon 1975: 182).

Side-notched and corner-removed points (7)

This variety contains 5 complete specimens and 2 basal fragments (Plate 2: 2-8).

These artifacts are manufactured from chert (4) and quartzite (3) and exhibit the following formal attributes: shoulder shapes are dominated by obtuse angles, being almost evenly divided between corner and side-notch varieties; with the exception of 1 notch, all are deep, rounded and broad in form; the base shape is straight (6) and sub-convex (1); basal thinning is present (5) while some are still elliptical in cross-section (2); grinding is present on all notches and on all bases which are thinned, and ranges from moderate to heavy.

Metrical attributes are as follows: length, maximum width and maximum thickness for the complete points are 34 - 51 mm,  $\bar{X}$  40.1 mm; 18 - 25 mm,  $\bar{X}$  20.8 mm; and 6.5 - 8 mm,  $\bar{X}$  6.8 mm respectively. Below the shoulder attributes for all of the artifacts are as follows: shoulder width - 17.2 - 25.5 mm,  $\bar{X}$  20.8 mm; shoulder to base - 9 - 14.7 mm,  $\bar{X}$  11.6 mm; stem width - 11.7 - 14.5 mm,  $\bar{X}$  12.8 mm; stem length - 8 - 11.4 mm,  $\bar{X}$  9.5 mm; notch depth - 1.8 - 5 mm,  $\bar{X}$  3.3 mm, notch length - 7 - 14.4 mm,  $\bar{X}$  8.9 mm; and basal width - 12 - 17 mm,

$\bar{X}$  13.8 mm.

On the basis of comparative artifact analysis, these points are thought to relate to Noble's (1971) Frank Channel complex. These materials are associated with late Chipewyan occupation and tentatively dated at A.D. 1300 to 1500.

Side-notch, convex base points (4)

Two of these specimens are whole, 1 is broken at the mid-section and 1 is a basal portion broken below the shoulders (Plate 2: 10-12).

These artifacts are manufactured from quartzite (3) and chert (1) and have the following formal attributes: shoulder shape is characterized by obtuse angles, more often sharp than rounded; stems are all side-notched; notches are all deep, rounded and broad; basal shape ranges from convex (3) to sub-convex (1); thinning is evident on all bases; and grinding is evident on all bases and notches and ranges from moderate to heavy.

Measurements for length, width and thickness of the 2 complete specimens are 38 and 33 mm; 14 and 18.5 mm; and 6 and 6 mm respectively. Other metrical attributes where applicable are as follows: shoulder width - 13.5, 18.5 and 23 mm; shoulder to base - 12, 15 and 14.5 mm; stem width - 9.3, 14.5, 13.2 and 13.7 mm; stem length - 10, 13 and 12 mm; notch depth - 1.5 - 5 mm,  $\bar{X}$  3 mm; notch length - 7 - 9 mm,  $\bar{X}$  7.8 mm; and basal width - 12.5, 15, 21.3 and 20 mm.

These artifacts are considered to be a regional variant of late Chipewyan occupation and are similar to a projectile

point recovered from northern Manitoba which has a radiocarbon date of ca. A.D. 1300 (Nash 1974: personal communication).

Side-notch, square base points (2)

This variety consists of 2 specimens which are complete except for the mid-right lateral edge of 1 specimen (Plate 1: 9, 10).

One artifact is made from quartzite while the other is made from chert. The formal attributes are as follows: shoulder shapes are obtuse angles which are mainly sharp; stem shapes are both side-notch; notch forms are both shallow and narrow, being V-shaped on 1 artifact and rounded on the other; bases are both straight and thinned; grinding or dulling is not present on either specimen.

Metrical attributes are as follows: length - 22.5 and 22 mm; width - 16.5 and 11.5 mm; thickness - 4.5 and 4 mm; shoulder width - 16 and 11 mm; shoulder to base - 8.3 and 6 mm; stem width - 10 and 9 mm; stem length - 4.3 and 6 mm; notch depth - 2.5 - 3 mm and 1 - 1.5 mm; notch length - 4 mm and 2 - 4 mm; and basal width - 13.2 and 10 mm.

Comparative artifact analysis suggests that both of these artifacts represent Woodland Cree occupation (Hlady 1971: 113). Tentatively this occupation may have occurred sometime between A.D. 1500 and 1800.

Scrapers (86):

Stone scrapers are plano-convex artifacts which are usually retouched only on the convex dorsal surface. These tools may have functioned in the scraping of skins, bone or

wood and could have had other additional uses. They were either hand held or modified for hafting.

The artifacts within this class consist of 59 complete scrapers, 18 identifiable scraper fragments and 9 unidentifiable scraper fragments. The class is sub-divided into a number of varieties which consist of end scrapers, end and side scrapers, and side scrapers.

#### End scrapers (51)

The scrapers within this variety exhibit a working edge on the distal edge of the implement (Plate 4: 1, 2). These artifacts constitute the largest variety of scrapers recovered. Thirty-seven of the specimens are complete while 14 consist of the distal scraping edge and varying proportions of the mid-section.

The majority of end scrapers are made from quartz (24) and quartzite (23) with chert (3) and jasper (1) utilized to a much lesser extent. For those scrapers that are complete, the basic overall shape is dominantly rectangular expanding towards the distal end (17) followed by a triangular shape (10). The other complete scrapers are divided between square (5) and discoidal (5) shapes. Of the total number of end scrapers, nearly all utilize the distal end as the working edge with the only exception being 1 double end scraper which has working edges on the distal and proximal ends. The working edge is sub to markedly convex in shape with only 1 edge being straight.

Dorsal retouch is mainly limited to the distal end (41)

but is also apparent to a varying extent on the dorsal surface as well as the distal end (10). Except on 1 specimen, the distal end retouch covers the whole edge and appears to be fairly evenly divided between regular parallel flaking and irregular pressure flaking. Use wear in the form of crushing and step flaking is evident on all working edges. Occasionally the use wear extends to the upper left or right lateral edges. Lateral edge retouch is not apparent on the majority of specimens (43) and when it occurs (8), does not extend over the whole edge. Ventral retouch occurs on 2 end scrapers and, in both cases, covers only a small portion of the ventral surface.

Metrical attributes for the length, thickness and width of the complete end scrapers are 12 - 40.5 mm,  $\bar{X}$  23.1 mm; 5 - 13.5 mm,  $\bar{X}$  7.9 mm; and 16 - 33.2 mm  $\bar{X}$  20.5 mm respectively. Measurements for all of the end scrapers are as follows: working edge width - 8 - 30 mm,  $\bar{X}$  18.6 mm; and angle of the distal edge -  $56^{\circ}$  -  $108^{\circ}$ ,  $\bar{X}$   $78^{\circ}$ .

The measurements for a single large end scraper are separated from the others and are as follows: length - 61 mm; thickness - 23.4 mm; width - 61.5 mm; working edge width - 37 mm; and distal edge angle -  $82^{\circ}$ .

#### End and side scrapers (20)

In this variety of scraper the working edge is located on the distal and 1 or both of the lateral edges (Plate 4: 3). Seventeen of these implements are complete and 3 are broken.

Raw materials utilized for these scrapers consist of

quartzite (11), quartz (8) and chert (1). The overall basic shape of the complete scrapers is dominated by rectangular (6) and discoidal (6) followed by triangular (4) and square (1) shapes.

Within these scrapers, retouch is evident on the distal and the right edge (6), the distal and the left edge (11), and the distal and both lateral edges (3). The working edges are predominantly convex in shape although a few concave and straight edges are evident. Dorsal retouch is generally restricted to the working edges and only occasionally covers part of the dorsal face. Distal and lateral retouch extends along the whole edge, or at least more than half of the edge, and is dominated by irregular pressure flaking. Use wear is evident on all working edges and consists mainly of crushing and step flaking. Ventral retouch is not evident on any of the specimens.

The length, thickness and width of the complete scrapers are 14 - 39.5 mm,  $\bar{X}$  22.9 mm; 4 - 11.5 mm,  $\bar{X}$  6.4 mm; and 12.5 - 28.3 mm,  $\bar{X}$  19.7 mm respectively. Other measurements for all of the scrapers are as follows: distal edge width - 4 - 27 mm,  $\bar{X}$  15.6 mm; right lateral edge length - 13 - 23 mm,  $\bar{X}$  16.3 mm; left lateral edge length - 2.5 - 27.5 mm,  $\bar{X}$  16.6 mm; distal edge angle  $63^\circ$  -  $92^\circ$ ,  $\bar{X}$   $77.8^\circ$ ; right edge angle -  $66^\circ$  -  $90^\circ$ ,  $\bar{X}$   $77.5^\circ$ ; and left edge angle -  $56^\circ$  -  $107^\circ$ ,  $\bar{X}$   $71.7^\circ$ .

#### Side scrapers (6)

These scrapers exhibit working edges on 1 or both of the lateral edges (Plate 4: 4). The scrapers within this



third variety consist of 4 complete and 2 incomplete artifacts.

The artifacts are made from quartzite (5) and quartz (1) materials and are dominated by artifacts that are worked on 1 lateral edge rather than both. Dorsal retouch covers the whole lateral edge and is characterized by irregular pressure flaking. The edges are all convex in shape.

Measurements for the complete artifacts are as follows: length - 17 - 22.6 mm,  $\bar{X}$  19.9 mm; thickness - 5.4 - 9 mm,  $\bar{X}$  6.7 mm; width - 13.5 - 17 mm,  $\bar{X}$  15.2 mm; and working edge length - 14.7 - 22 mm,  $\bar{X}$  16.5 mm. Angles for all of the worked lateral edges are  $63^{\circ}$  -  $89^{\circ}$ ,  $\bar{X}$   $73.5^{\circ}$ .

The major difference between all of these scraper varieties is the position of retouch and the position of the working edge. All other metrical attributes appear similar and considerable overlap occurs within these dimensions.

#### Bifacial tools (30):

The artifacts in this section are stone implements which are worked either on both faces or along both sides of 1 or more edges. Use wear is often apparent on the edges indicating the function of these artifacts as knives or general scraping tools. Although projectile points are actually bifacial tools, their differing functional use excludes them from this category.

The artifacts within this class consist of 2 relatively complete bifaces, 6 bases, 4 mid-sections, 4 tips, 12 edge fragments and 2 asymmetrical hafted knives. Most of the artifacts are made from quartzite with 1 base, 3 mid-sections,

1 tip and 2 edge fragments made from quartz and 1 edge fragment made from chert.

Both of the bifaces (Plate 4: 5) exhibit primary retouch on the dorsal and ventral surfaces and secondary retouching along the edges. The bases are thinned and ground and 1 is concave in shape while the other is slightly convex. Use wear is evident on the edges and heavy crushing occurs on all edges around the smaller biface. Measurements for the small and larger bifaces are: length - 34.9 and 121.5 mm; width - 24.7 and 52 mm; and thickness - 7.9 and 11.5 mm respectively.

All of the base fragments are convex in shape and have been thinned. Use wear and dulling is apparent on 1 of the specimens. Only limited use wear is evident on the tip fragments and mid-sections and none of the biface fragments show additional retouch or modification after breakage has occurred. The category of edge fragments consists of specimens which have broken from larger bifaces, or lithic materials which have been bifacially retouched along 1 or more edges. Use wear and dulling is often apparent on these implements.

Both of the hafted knives are complete except for a small portion of the base that has broken away from each artifact (Plate 4: 6,7). It is suggested that these artifacts are knives rather than projectile points because of the asymmetrical shape of the body and hafting element, and also, because of the presence of use wear and dulling found only

on the pronounced convex edge. The artifacts have been manufactured in such a way that when hafted a strong clear edge remains free, probably for cutting purposes.

Metrical attributes are: length - 45.5 and 43.2 mm; width - 20 and 20.5 mm; width of stem - 10 and 13 mm; width of shoulder - 16.8 and 18 mm; and thickness - 7 and 6.3 mm.

#### Unifacial tools (73):

The artifacts in this class are defined as implements which are unifacially worked along 1 or more edges. Use wear is often apparent along the worked edges and these implements are thought to have functioned as knives or perhaps general scraping tools. All were held in the hand and, with the exception of 1 spokeshave, no modification for hafting is apparent.

The artifacts within this class consist of 6 denticulates, 55 unifacial edge tools and 4 spokeshaves. Eight implements with extensive use wear along 1 or more edges are also included in this class. For almost all of these artifacts the edge retouch is the only modification apparent.

#### Denticulates (6)

The denticulates are all unifacially worked along 1 edge and 2 are also retouched along a second edge. Irregular pressure flaking has produced rough and pronounced serrated edges on these implements. Use wear is limited and only noticeable along a few edges. Quartz (4) and quartzite (2) materials are utilized for these artifacts.

Metrical attributes are as follows: length - 37 - 79 mm,  $\bar{X}$  46.5 mm; width - 17.9 - 62.5 mm,  $\bar{X}$  34.7 mm; thickness - 8 - 23 mm,  $\bar{X}$  15.4 mm; length of working edge - 19.4 - 44 mm,  $\bar{X}$  30 mm; and angle of working edges -  $65^{\circ}$  -  $95^{\circ}$ ,  $\bar{X}$   $78.7^{\circ}$ .

#### Unifacial edge tools (55)

The artifacts within this group exhibit unifacial irregular pressure flaking on 1 (41), 2 (10), or 3 (3) edges, with 1 implement having retouch on alternate edges (Plate 4: 8,9). Use wear in the form of crushing, dulling and step flaking is noticeable on almost all of the worked edges. Deliberate backing opposite the working edge is not present on any of the artifacts. Raw materials utilized consist of quartzite (35), quartz (13) and chert (7). The artifacts are generally irregular in shape but rectangular, oval and triangular forms are dominant.

Metrical attributes are as follows: length - 13 - 90 mm,  $\bar{X}$  39.7 mm; width - 14 - 64.2 mm,  $\bar{X}$  31.7 mm; thickness - 4.5 - 26 mm,  $\bar{X}$  9.4 mm; length of working edge - 1.9 - 75.6 mm,  $\bar{X}$  28.2 mm; and angle of working edge -  $38^{\circ}$  -  $88^{\circ}$ ,  $\bar{X}$   $67.4^{\circ}$ .

#### Spokeshaves (4)

A spokeshave is an artifact with a retouched concave or notched scraping edge which is used to scrape wood or bone. A common use of these implements is thought to have been scraping or straightening the shafts of arrows.

The artifacts within this class consist of 1 mid-section from a quartz side-notched point, 2 quartzite flakes and 1 piece of quartz shatter, all of which exhibit 1 unifacially

worked concavity on 1 of the edges (Plate 5: 1,2). Other than the initial work on the point fragment, further modification is not apparent.

Measurements for the working edge are as follows: length of notch - 8 - 11 mm,  $\bar{X}$  9.6 mm; depth of notch - 1 - 2.2 mm,  $\bar{X}$  1.7 mm; and angle of working edge bevel -  $65^{\circ}$  -  $75^{\circ}$ ,  $\bar{X}$   $70^{\circ}$ .

#### Use wear (8)

These artifacts consist of pieces of lithic materials which exhibit heavy use wear on 1 (5) and sometimes 2 (3) edges. The edges are often heavily crushed and abraded with no other retouch evident on the specimen. Quartz (5) is utilized more than chert (2) and quartzite (1), and the artifacts are generally irregular in shape. These artifacts tend to be larger in size than the unifacial edge tools and the measurements are as follows: length - 41.3 - 106 mm,  $\bar{X}$  61.4 mm; width - 19.5 - 57.8 mm,  $\bar{X}$  39.5 mm; thickness - 7.7 - 27 mm,  $\bar{X}$  18.9 mm; and length of working edge - 12.9 - 57 mm,  $\bar{X}$  34 mm.

#### Wedges (36):

The artifacts in this class are produced through a process of bi-polar crushing. The implement is placed on an anvil stone and struck along the opposite edge which results in the simultaneous removal of stepped flakes from both edges. It has been suggested that this flaking process is aimed at the removal of columnar flakes from the lateral edges to produce sharp, right-angled burins at the corners. The tool

functions as a burin as well as a general cutting and scraping tool (Wright 1972: 9).

A number of alternative hypotheses have been formulated which suggest that these artifacts may not be the finished products of implement manufacture. This bi-polar technique may have been used in the preparation of blanks, possibly to be made into scrapers or other implements. It is also possible that these artifacts represent exhausted cores which have been discarded (Forsman 1974).

Twenty-four artifacts in this class are complete while the other 12 are incomplete. Only the complete specimens are considered in this summary. These implements are made on thick pieces of shatter (16), thick flakes (4), bifacial fragments (2) and scraper fragments (2). The raw materials utilized consist mainly of quartz (15), but quartzite (8) and chert (1) are also used. In general, the artifacts tend to be rectangular in shape, with the distal and proximal ends being straight and the lateral edges being convex in shape (Plate 5: 3-5). Evidence of retouch is restricted to the distal and proximal edges with heavy crushing and step flaking generally covering the complete edge. Crushing on 3 edges is evident on 1 implement. On most specimens at least 1 corner evidences the removal of columnar flakes, and the corners are often ground and dulled.

Metrical attributes for these implements are as follows:  
distance between crushed edges - 15 - 53.6 mm,  $\bar{X}$  27.8 mm;  
distance between uncrushed edges - 14 - 49.2 mm,  $\bar{X}$  24.2 mm;

and thickness - 6 - 19 mm,  $\bar{X}$  10.3 mm.

#### Gravers (5):

A graver is an implement which exhibits at least 1 strong, pronounced, sharp tip which can be used for incising, cutting or gouging. The artifact may have been used for hide, bone or wood working.

The artifacts within this group consist of 1 triangular and 4 columnar pieces of shatter made from quartz (2), quartzite (1), chert (1) and shale (1). All have been shaped and retouched at the distal end to produce a strong, pronounced tip (Plate 5: 6). Three of the tips have been shaped by the removal of small linear flakes, while 2 have resulted from a single burin blow at the distal end. Use wear is evident on the distal tip with grinding and dulling also apparent.

Measurements for the length, width and thickness are 25 - 40 mm,  $\bar{X}$  32.5 mm; 5.5 - 26.5 mm,  $\bar{X}$  12.9 mm; and 6 - 12 mm,  $\bar{X}$  9 mm respectively.

#### Hammerstones (5):

These artifacts are thought to be multi-purpose pounding implements, possibly utilized as hammerstones in the manufacture of other lithic implements.

The artifacts within this group consist of 3 lumps of quartz and 2 river cobbles which are triangular, round and rectangular in shape, and which exhibit heavy battering and crushing along 1 or more edges.

The attributes of these implements are as follows:

length - 39.5 - 83 mm,  $\bar{X}$  68.3 mm; width - 28.5 - 64 mm,  $\bar{X}$  48 mm; thickness - 18 - 51 mm,  $\bar{X}$  34.8 mm; and weight - 42 - 280 g,  $\bar{X}$  140 g.

#### Cores (43):

A core is a piece of lithic material from which 1 or more flakes have been struck for the purpose of making implements. The size of a core is often highly variable. The cores within this class are divided into 3 varieties which consist of cobble cores, blade-like cores, and random cores.

#### Cobble cores (19)

All of the cobble cores within this class consist of lumps of quartz with only 1 striking platform continuously utilized. The striking platform consists of a natural fracture plane (14) or occasionally a cortex face (5). Anywhere from 1 to 6 flakes have been removed from each striking platform with 3 to 4 flakes the average number. Bi-polar crushing is evident on 9 cores and crushing occurs on the proximal ends of 9 other cores. This evidence suggests that the cores were placed on an anvil stone during the flaking process.

Metrical attributes of these cores are as follows:

width - 21.2 - 73.5 mm,  $\bar{X}$  40 mm; breadth - 13 - 54 mm,  $\bar{X}$  30.6 mm; length - 16 - 83 mm,  $\bar{X}$  44.7 mm; weight - 14 - 241 g,  $\bar{X}$  87 g; and angle of striking platform - 80° - 119°,  $\bar{X}$  102.6°.



#### Blade-like cores (14)

The cores in this group utilized quartz (11) and quartzite (3) materials and again only 1 striking platform has been continuously used. Although these cores have not been prepared, they appear to have produced rough linear flakes. The majority of striking platforms are natural fracture planes and rarely a cortex face. Two to 6 flakes have been struck from each platform with 3 to 5 flakes the average number. Bi-polar crushing is evident on half of the cores and 6 more exhibit crushing on the proximal end. Again use of an anvil stone is suggested.

The metrical attributes of the blade-like cores are as follows: width - 12 - 41.5 mm,  $\bar{X}$  22.4 mm; breadth - 7.7 - 21.5 mm,  $\bar{X}$  13.4 mm; length - 16 - 46 mm,  $\bar{X}$  28.8 mm; weight - 5.6 - 42 g,  $\bar{X}$  19.6 g; and the angle of the striking platform -  $75^{\circ}$  -  $123^{\circ}$ ,  $\bar{X}$   $93.5^{\circ}$ .

#### Random cores (10)

The random cores are generally much larger in size than the other 2 varieties. Quartz (7) and quartzite (3) blocks have been utilized and each core exhibits 2 or 3 striking platforms. The cores have not been prepared and the platforms consist of convenient fracture planes on the core surface. One to 5 flakes have been struck from each platform with 1 to 3 flakes the average number. Bi-polar crushing is evident on 6 specimens and 1 more exhibits crushing on the proximal end, again indicating the use of an anvil stone during the flaking process.

The metrical attributes for these cores are as follows:  
width - 21 - 82 mm,  $\bar{X}$  46.8 mm; breadth - 11 - 54 mm,  $\bar{X}$  31.6 mm;  
length - 21 - 87 mm,  $\bar{X}$  55.9 mm; weight - 50 - 518 g,  $\bar{X}$  151 g;  
and the angle of the striking platform -  $69^\circ$  -  $122^\circ$ ,  $\bar{X}$   $100.9^\circ$ .

#### Miscellaneous (2):

The 2 specimens in this category consist of a notched river pebble (Plate 5: 7) and a ground stone bi-point (Plate 5: 8).

The notched pebble is 75 mm long, 14 - 18 mm wide and exhibits a number of vertical notches along both edges. There appear to be 12 notches on the left lateral edge and 5 on the right lateral edge. All of the notches on the left and 3 on the right appear to occur in groups of 3. The notches are 2.9 - 7.6 mm in length and 0.5 - 1 mm in depth. Other than these notches, smaller scratches and minimal grinding at the distal and proximal ends, there appears to be no further modification.

The second artifact has been ground on all surfaces to produce a symmetrical bi-pointed object. One of the ends has been broken and a rough flake has been removed from the middle of the ventral surface. The artifact is 60 mm long, 13 mm wide and 10 mm thick. As yet no functional use is suggested for either of these artifacts.

### 7.3 Flakes

The modification and working of tools, blanks and cores results in the removal of lithic materials known as flakes. The flakes vary in size and shape and are

characterized by a striking platform (indicating the point of impact) and a bulb of percussion, which may vary from positive to negative in form. The flakes can be described as primary or secondary flakes. Primary flakes are those with cortex partially or completely covering the dorsal surface, while secondary flakes show no evidence of cortex on the dorsal surface.

The flakes from IhNh 2 are made from a variety of raw materials which consist of quartzite (276), chert (44), quartz (32) and other materials (5). The scarcity of quartz flakes may be the result of an inability to correctly distinguish and identify quartz shatter as flakes, or it may reflect a true bias in material types. The majority of flakes are secondary retouch flakes (327) with the rest being primary flakes (30). Of the secondary flakes, most (309) are considered to be chipping rejects or wastage due to their small sizes and thin cross-sections, while some (18) are large enough to function as blanks for further use or modification. Only the secondary flakes are dealt with in this section.

Visually, the flakes can be divided into 3 varieties on the basis of the occurrence of a strongly positive (119), flat (152) or negative (56) bulb of percussion. However, further analysis of the formal and metrical attributes of these flakes indicates no significant correlations between the various dimensions. With the exception of bulb presence and thickness, which correspondingly effects the angle of

the striking platform, there is no significant co-variation between these groupings of flakes. All exhibit a similar dominance of similar formal and metrical attributes. Even within the attributes of bulb thickness and striking platform angle there is considerable overlap between the groups, rather than 3 distinct peakings which would help to differentiate the groups. Therefore, the following description of these flakes deals with the data as a whole rather than dividing it up into a number of categories for which there appears to be no valid basis.

The secondary flakes exhibit the following formal attributes. In the longitudinal section most of the flakes are convex-concave (63.6%) followed by bi-plano (8.3%), convex-plano (7.3%), triangular (5.8%), and triangular-concave (2.4%) shapes. The remaining flakes (12.6%) fall into irregular, indeterminate and a variety of other shapes. The cross-sectional shapes are dominated by bi-convex (61.8%) followed by triangular-convex (23.8%) and plano-convex (2.8%) shapes. Again, the remaining flakes (11.6%) are divided between a number of categories. Flake curvature occurs predominantly along the longitudinal axis (65.7%) with the next largest grouping being flat (21.1%). The remaining flakes are curved about the longitudinal axis (2.8%); along and about the longitudinal axis (1.2%) and indeterminate (9.2%).

The striking platforms are dominated by bi-convex (51.4%) followed by triangular-convex (16.5%), concave-convex (6.7%) and plano-convex (6.2%) shapes. The remaining striking

platforms consist of edges (6.7%) and a variety of other shapes (12.5%). Analysis of the platform surface indicated that many (56.9%) had been altered during the flaking process. Cortex occurred on a few platforms (12.9%) and a few others (17.4%) had been flaked or chipped before the flake was removed. The remaining platforms (12.8%) do not exhibit cortex or alteration of any sort.

In the relationship between the bulb of percussion and the form of the flake, the bulb is often parallel (56.9%) to the form of the flake. The remaining specimens exhibit perpendicular (18.7%), oblique (13.5%) and indeterminate (11%) relationships between the orientation of the bulb and the flake form. In a majority of cases (90.9%) the bulb exhibits numerous flake scars and chips.

As only a small number of flakes are complete (38.5%), the mean values of the lengths and widths have not been calculated. Metrical attributes for the flakes are as follows: platform width - 1.2 - 22.8 mm,  $\bar{X}$  5.6 mm and platform thickness - 0.6 - 9.3 mm,  $\bar{X}$  2.2 mm. The measurements for bulb thickness and angle of the striking platform are divided for the positive, flat and negative bulbed flakes to provide a more adequate description of the dimensions of these attributes. The measurements for these 2 dimensions are as follows: bulb thickness - positive 0.5 - 7.4 mm,  $\bar{X}$  1.6 mm; flat 0.1 - 1.6 mm,  $\bar{X}$  0.6 mm; and angle of striking platform - positive 65° - 133°,  $\bar{X}$  115.7°; flat 70° - 143°,  $\bar{X}$  101.2°; and negative 70° - 128°,  $\bar{X}$  95.7°.

#### 7.4 Conclusions

Statistical analysis within the major artifact classes and within the flakes has failed to reveal significant co-variation between dimensions. The lack of results from the artifact analysis is probably the result of a number of factors. The 2 most important impediments are the small sample and the lack of comparative material and results to provide guidelines or background information.

Although the shatter is of little use analytically it is perhaps useful in other ways. It is interesting to note that while the shatter recovered from the site is made up mainly of quartz (76.1%) materials followed by quartzite (21.8%), chert (2%) and other materials (0.09%), the artifacts do not show the same singular dominance of quartz. The diagnostic artifacts are almost evenly divided between quartzite (48.2%) and quartz (42.9%) materials followed by chert (7.6%) and other (1.3%) materials. Within the artifact classes quartzite appears to play a much more important role as a material utilized. The cores are the only class of artifacts which show an exception to this trend. Most of the cores are of quartz (86%) with the remainder of quartzite.

This limited evidence suggests that the majority of quartzite and chert artifacts may have been brought to the site already made, or roughly made into blank form with only limited chipping required to complete the implement. The singular dominance of quartzite secondary retouch flakes over all other flake varieties may also support the above

suggestion. Alternatively, these variations in material types may simply mean that there is less wastage or fewer cores used in the production of quartzite and chert implements than there is in the production of quartz implements.

The majority of quartzite implements, flakes and detritus are characterized by a general range of colours which vary from shades of gray to shades of brown. One of the few exceptions to this trend is a bright red quartzite biface base. This material is similar to material types from Aberdeen Lake, District of Keewatin (Wright 1974: personal communication). It is suggested that this very limited data may be of interest to the discrete band/discrete herd hypothesis and it is possible that this material spread indicates movement by hunters between the summer and winter ranges of the barren-ground caribou. In this case the hunters would be Chipewyan and the caribou would belong to the Beverly Herd.

The wide range of artifacts, both in types and numbers, perhaps illustrates the habitation nature of the site. A variety of implements suggests a wide array of activities. These varied activities in turn suggest a longer period of occupation, or a more seasonally consistent period of occupation, by late Chipewyan groups.

## 8. IhNh 2 - HUMAN BEHAVIOR PATTERNS

### 8.1 Introduction

Traditionally, archaeology has always stressed how limited and skewed archaeological information is due to the lack of complete artifact preservation. However, during the last few years a new approach has been utilized which stresses the more 'positive' aspects of the archaeological record. This approach suggests that the surviving prehistoric remains represent systematic behavior by the ancient peoples who occupied the sites. The loss, breakage and abandonment of implements and facilities at different locations is the result of different tasks performed by individuals or groups. The recovered artifacts and features are a 'fossil record' of the actual operation of an extinct society. Such a fossil record may be understood through the quantitatively variable spatial clusterings of formal classes of artifacts (Binford 1972a: 136). The current analytical trend suggests that there are always relations between the debris and the actions of the prehistoric peoples, and that the spatial distributions of the artifacts represent behavior patterns of an ancient culture.

This approach is feasible in an analysis of IhNh 2. The basic assumption underlying this chapter is that human behavior is patterned and non-random and will be reflected in a patterning of the cultural remains. This emphasis on spatial relationships implies that by plotting tool types or other artifacts against precise provenience with respect



to ground matrix, it is possible to delimit activity areas along with associated tool kits. Although it is not always possible to state what specific activities resulted in the observed differential distributions, it is at least possible to recognize that activities were differentiated and to observe the formal nature of the observed variability (Binford 1972a: 136). These activity areas may be the result of site occupation by one or more distinct cultural groups and may occur vertically within the site or horizontally across the site.

Another basic assumption underlying this chapter is that disturbance has not significantly altered the artifacts and the relations between them. Disturbance is here defined as any re-arrangement of the cultural remains by any force (natural or human) which is not associated with the original activity. There was no noticeable disturbance through natural forces such as root action and only 1 rodent burrow was noticed during excavation. The majority of disturbance resulted from historic occupation which, in some cases, had disturbed the first 3 - 4 cm of the soil matrix or had deposited over-burden on top of the original surface. Occasionally throughout the site, pits and post holes were noticed. The most extensive disturbance through historic occupation was evident in 12 square meters at the northeast portion of the block excavation. In these squares there is enough widespread disturbance and pockets of disturbance to doubt the clusters that occur. However, in spite of these

areas, the site is considered to be generally undisturbed and the majority of materials have been recovered 'in situ'. A limited amount of mixing and spreading has resulted from subsequent occupations but activity areas, or at least differential clusterings, are still thought to be a workable concept.

The cultural materials are analyzed in an attempt to delineate spatial evidence of activity by the prehistoric occupants of the site. It is suggested that activity areas and associated tool kits will become apparent on the basis of formal type and material similarity and on the relative closeness of materials within the vertical and horizontal planes. As structural outlines or divisions were not evident during excavation, and, as it was not possible to isolate each complete individual occupation, analysis attempts to focus upon the more basic activity areas. The only features noticed during excavation were a few rough semi-circles of stones indicating the scattered remains of hearths, and circular patches of charcoal-stained earth indicating hearth areas. In analyzing the data it is assumed that the original occupation surface is not necessarily of the same slope as the present day surface. Since there is no natural or cultural stratigraphy to help divide or associate the materials, similar artifacts within a similar plane and having relative proximity are considered to be associated.

The analysis to determine activity areas focusses upon all of the diagnostic artifacts and a few significant

clusterings or associations of detritus, flakes and rocks. The procedure followed is simply to plot all of the diagnostic artifacts and any significant shatter and rock formations for each excavation unit on plan view sheets in an attempt to identify possible activity areas. This type of analysis is productive, and the tentative groupings and activity areas are outlined below. The analysis begins with the block excavation, which for ease of presentation is divided into 7 analysis units (Fig. 8). After proceeding through Units 1 to 7, the results from the rest of the site are outlined. All of the artifacts are designated on the plan view sheets by different symbols. A key to these symbols is outlined in Table 5.

## 8.2 Block analysis

### Unit 1:

The first unit of analysis consists of squares #65, #39 and #34 in the southwest portion of the block. The plotting of all artifacts etc. on a single horizontal plane evidences a number of discrete groupings (Fig. 9).

(1) The most apparent cluster is a large group (approximately 700 pieces) of quartz and occasionally quartzite detritus which is generally concentrated in the southeast quadrant of square #39. The cluster has a horizontal spread of approximately 140 X 80 cm and extends vertically from 7 - 18 cm below the surface, with the majority of materials occurring from 7 - 12 cm below the surface. It is suggested that this cluster represents the waste

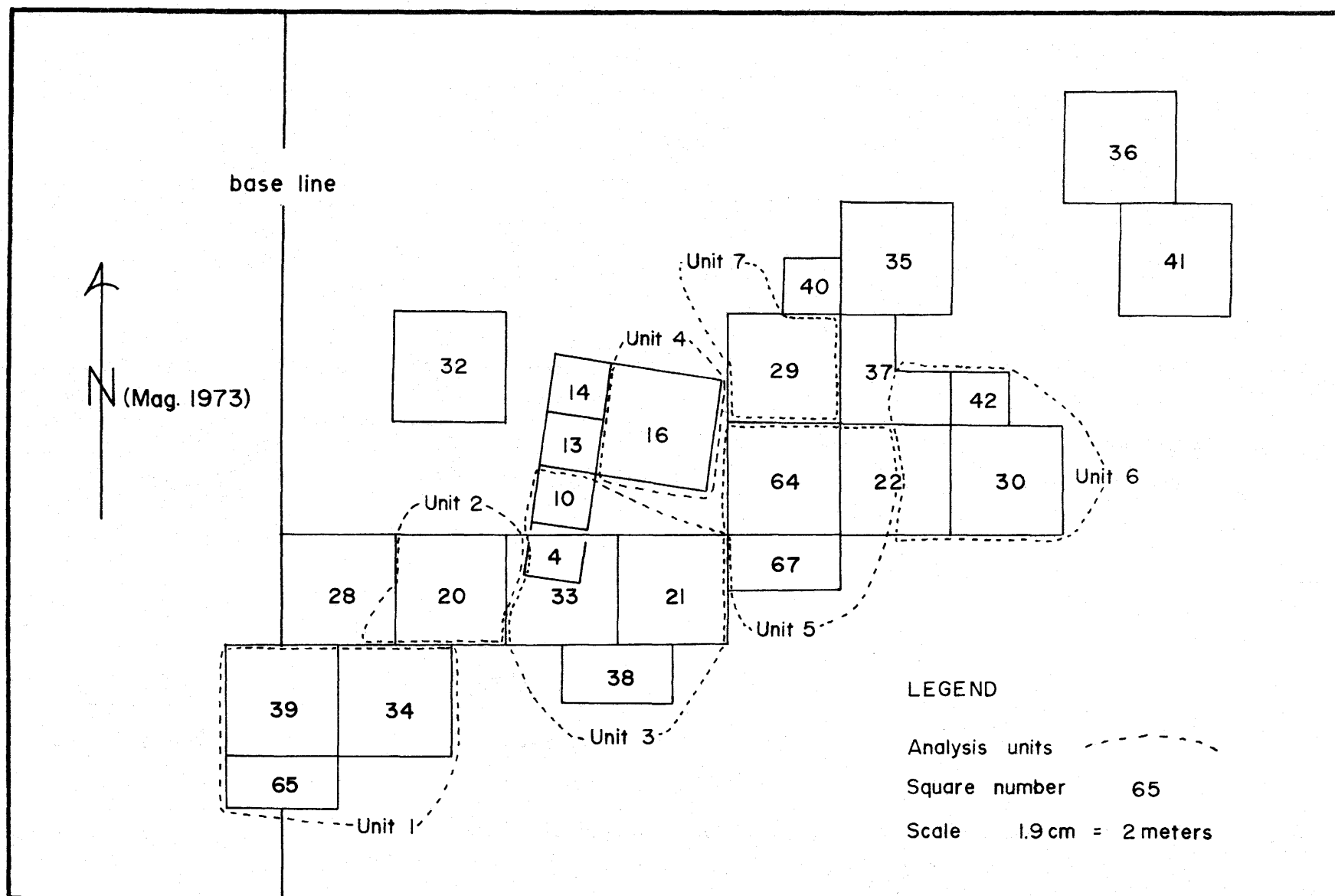


Figure 8. IhNh 2 block excavation and analysis units

Table 5 - Key to the artifact symbols shown on the plan view sheets

<b>Projectile Points</b> Point (complete) Point Base Point Mid-section Point Tip	P PB PM PT
<b>Scrapers</b> End Scraper End and Side Scraper Side Scraper Scraper Fragment Scraping Plane	Sc ES S SF SP
<b>Bifaces</b> Biface (complete) Biface Base Biface Fragment (tip, mid-section) Bifacial Edge Tool Hafted Knife	B BB BF BE K
<b>Unifaces</b> Denticulate Unifacial Edge Tool Spokeshave Use Wear	D U SK UW
<b>Wedges</b>	W
<b>Gravers</b>	G
<b>Hammerstones</b>	HS
<b>Cores</b> Blade-like Cobble Random	BL C R
<b>Quartz Lumps</b>	L
<b>Notched Stone</b>	NS
<b>Ground Stone</b>	GS

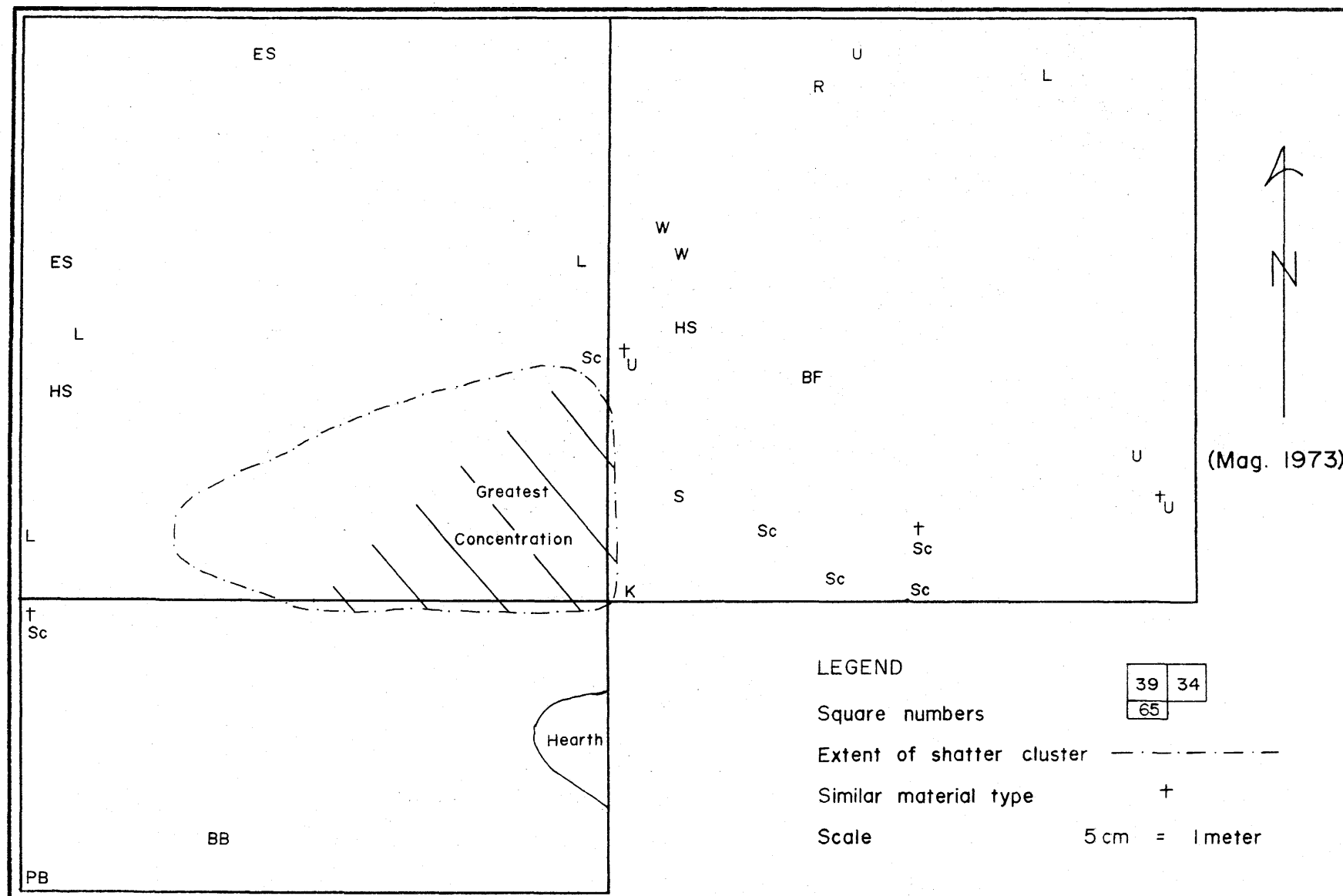


Figure 9. Unit I - Hearth and activity areas

materials from a chipping station.

It is possible that 3 large lumps of quartz, 2 quartz hammerstones, 1 random quartz core and 2 wedges are also associated with this chipping station. These artifacts are found within a radius of 40 - 110 cm to the northeast and northwest of the chipping station and with the exception of the core, which is 17 cm below the surface, all range from 5 - 12 cm below the surface. At this point, these materials are thought to be related to the chipping process as either hammerstones or cores. The wedges are tentatively included with these materials on the basis of vertical and horizontal proximity.

(2) The next cluster of materials is located mainly in the southern portion of square #34. The group consists of 3 end scrapers, 1 side scraper, 3 unifacial edge tools, 1 asymmetrical hafted knife and 1 possible biface fragment. The artifacts are located over an area of 200 X 80 cm and range from 7 - 11 cm below the surface. Three of the artifacts were made from the same type of waxy quartzite. This raw material was utilized for only 1 other artifact (an end scraper from square #65) recovered from IhNh 2 and further suggests association. The implements within this distinct cluster are all considered to be associated, and it is suggested that they represent an activity area which may possibly be related to some aspect of hide working. Two other end scrapers are located well within the horizontal distribution but range from 5 cm above to 11 cm below the

other materials and may or may not be part of the activity area.

(3) One small hearth area was exposed in the eastern end of square #65. The hearth was identified by the charcoal-stained soils and charcoal flecks which outline the feature. No rocks, secondary retouch flakes and chips or bone fragments were associated within or around the hearth, and it is not possible to indicate the specific function of this area. The exposed portion of the hearth is 25 - 35 cm in area and extends from 3 - 9 cm below the surface in depth.

A variety of other artifacts were recovered from these squares but the data is too limited to suggest further evidence of activity areas.

#### Unit 2:

The squares under analysis in Unit 2 consist of the southeast quadrant of #28, all of #20 and the northwest quadrant of #33. The other portions of #28 contain no diagnostic artifacts and the remaining quadrants of #33 are covered within another unit.

There are a number of diagnostic artifacts recovered from these squares. While the artifacts separate vertically into what appear to be 3 groups, the horizontal configurations evidence no specific clustering. The first group (Fig. 10) consists of 2 end scrapers, 2 end and side scrapers, 1 graver, 2 bifacial edge fragments, 1 quartz hammerstone and 1 late Chipewyan side-notched point. All of these artifacts are located from 4 - 6 cm below the ground surface. The second



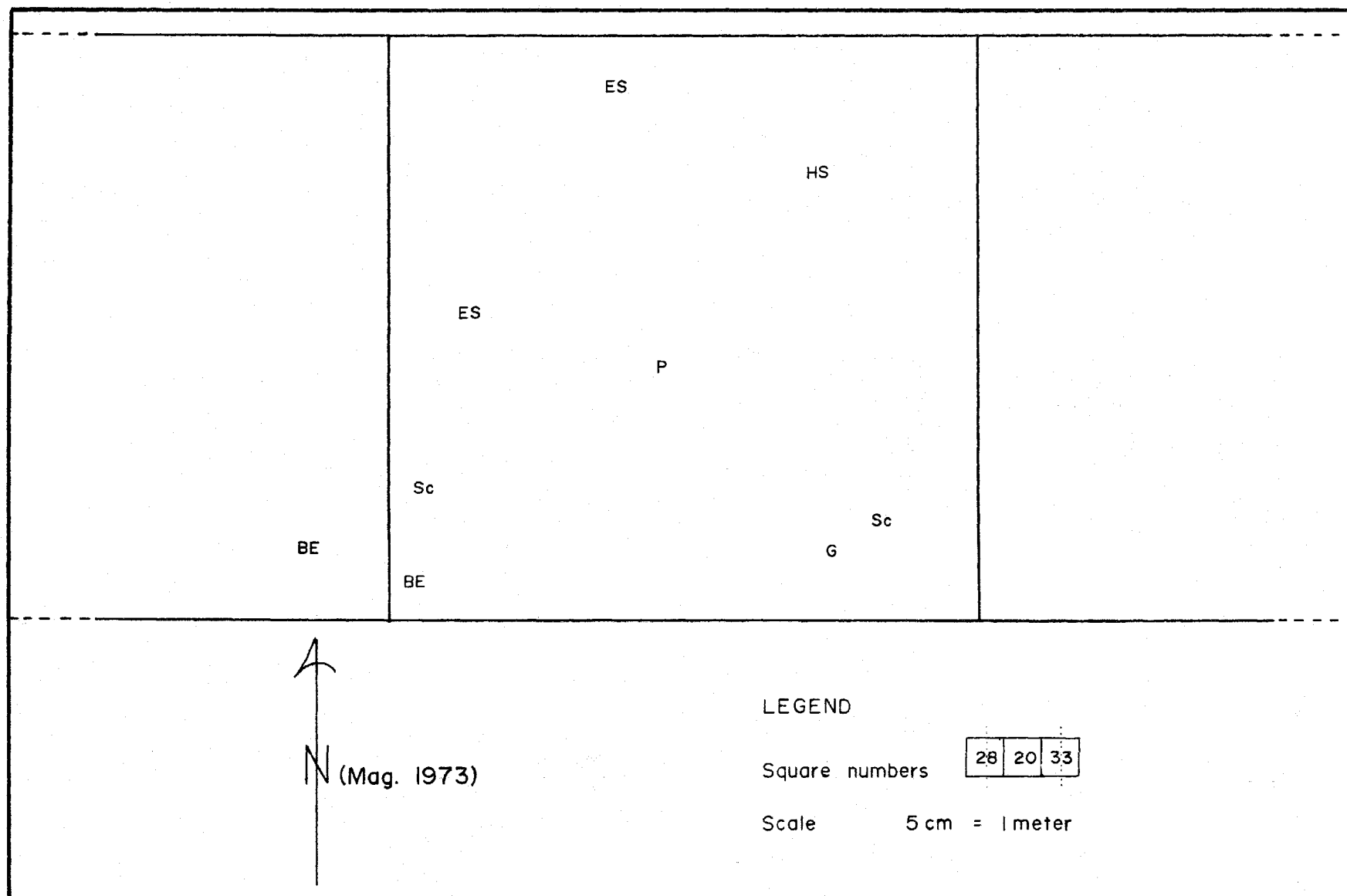


Figure 10. Unit 2 - Miscellaneous artifacts

group contains 1 unifacial and 1 bifacial edge tool (Fig. 11) which range from 9 - 10 cm below the surface and appear to be vertically distinct from the higher group. The third group of artifacts (Fig. 11) consists of 1 vertically notched river pebble, 1 side scraper exhibiting bi-polar crushing, 1 possible scraping plane and 1 late Chipewyan side-notched point. While these artifacts are not thought to constitute any special group they range in depth from 16 - 25 cm below the surface and appear to be distinct from the higher groups. Within all of these groups no particular grouping or pattern is evident, and it is suggested that these artifacts may be mixed and may have resulted from a number of unrelated occupations and activities. Certainly some of the artifacts, such as the 2 projectile points (Plate 2: 10, 11), would seem to be related in spite of the extensive vertical gap between them. However, clusters of other similar artifact types are not apparent.

### Unit 3:

The squares under analysis in this unit consist of the remainder of #33 (which also includes most of #4) and the whole of #21 and #38. Limited information from square #10 is also included. A considerable number of diagnostic artifacts were recovered in these areas along with 2 features recognized during excavation. The large group of cultural materials is divided into 2 groups as certain artifact groups appear to be vertically and to some extent horizontally separated.

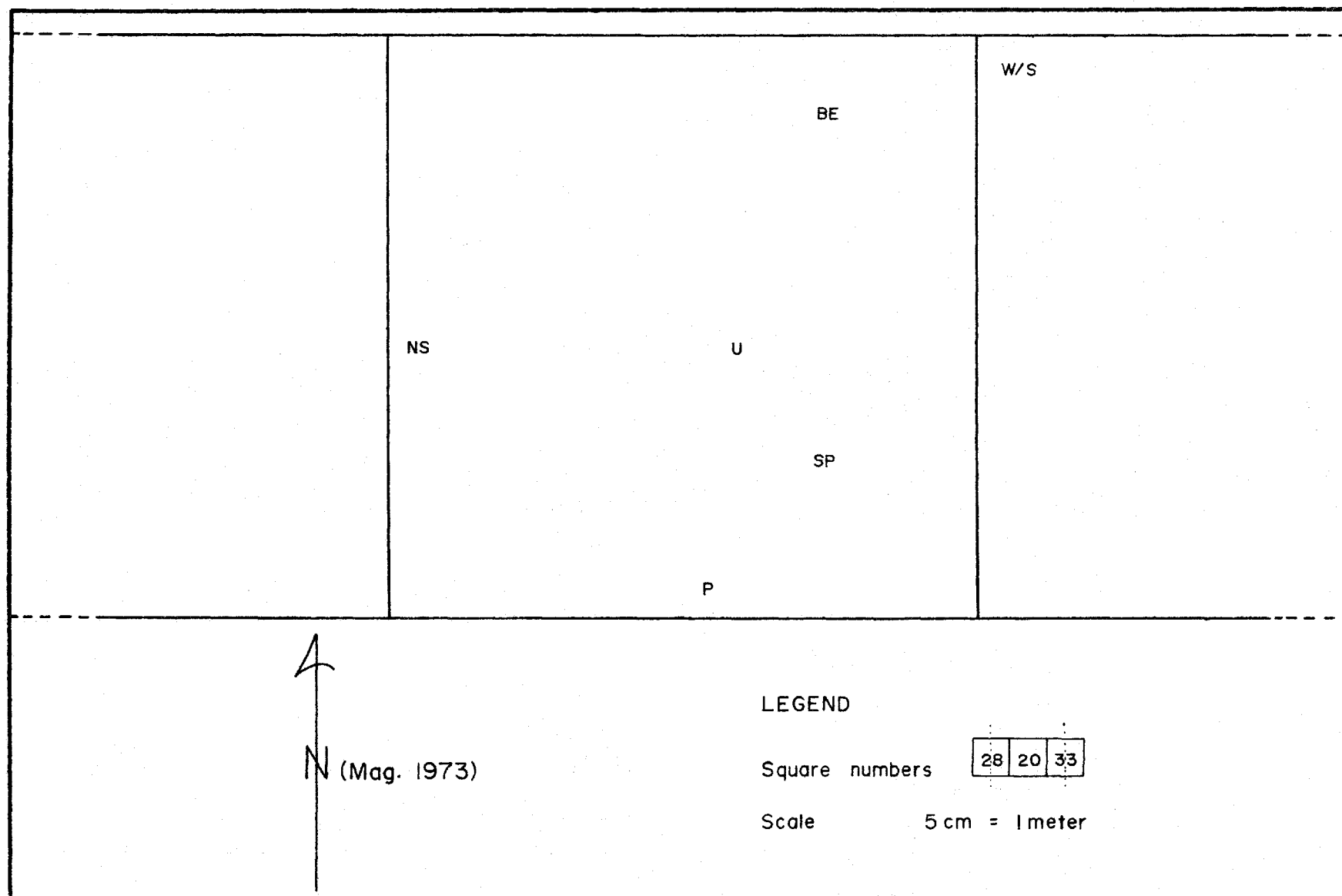


Figure II. Unit 2 - Miscellaneous artifacts

(1) The first group consists of 2 end scrapers, 2 side scrapers and possibly 1 quartz lump with use wear on 1 edge (Fig. 12). Areally they range from 60 - 140 cm apart while they extend from 4 - 8 cm below the surface in depth. These artifacts, especially the scrapers, are thought to be associated and may be the result of some activity related to hide working.

(2) The second group consists of 2 lanceolate point mid-sections, 4 point tips, 3 denticulates, 1 unifacial edge tool, 2 wedges, 1 possible proximal end of a scraper and 1 specimen exhibiting use wear (Fig. 13). The group has a radius of roughly 200 cm and a vertical depth which ranges from 10 - 16 cm below the surface. This group appears to be large and it is possible that further divisions could be made. Certainly the point fragments are related, as are the denticulates and possibly the wedges. Until more conclusive evidence is found, these groups of artifact classes will remain clustered within a single as yet unidentifiable activity area.

(3) One scattered hearth circle was uncovered in square #4 during the 1972 excavations (Fig. 14). The initial test excavations at IhNh 2 were incorporated into the 1973 grid plan which resulted in square #4 becoming part of square #33. The hearth consisted of a rough semi-circle of 11 rocks which ranged in depth from 5 - 17 cm below the surface and measured 90 X 58 cm from the outer edges of the circle. No charcoal was recovered but small fragments of calcine bone were noted

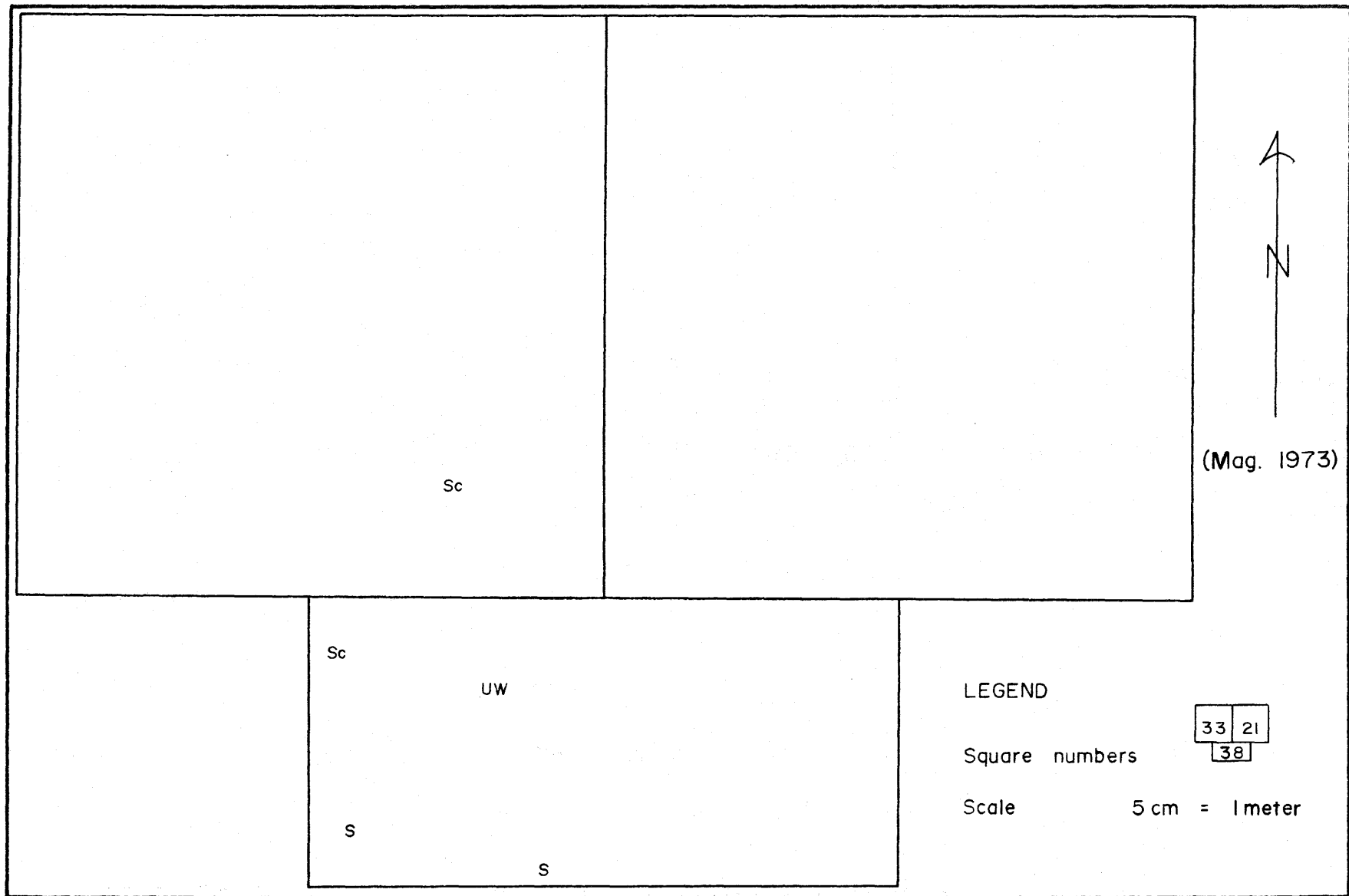


Figure 12. Unit 3 - Projected activity area

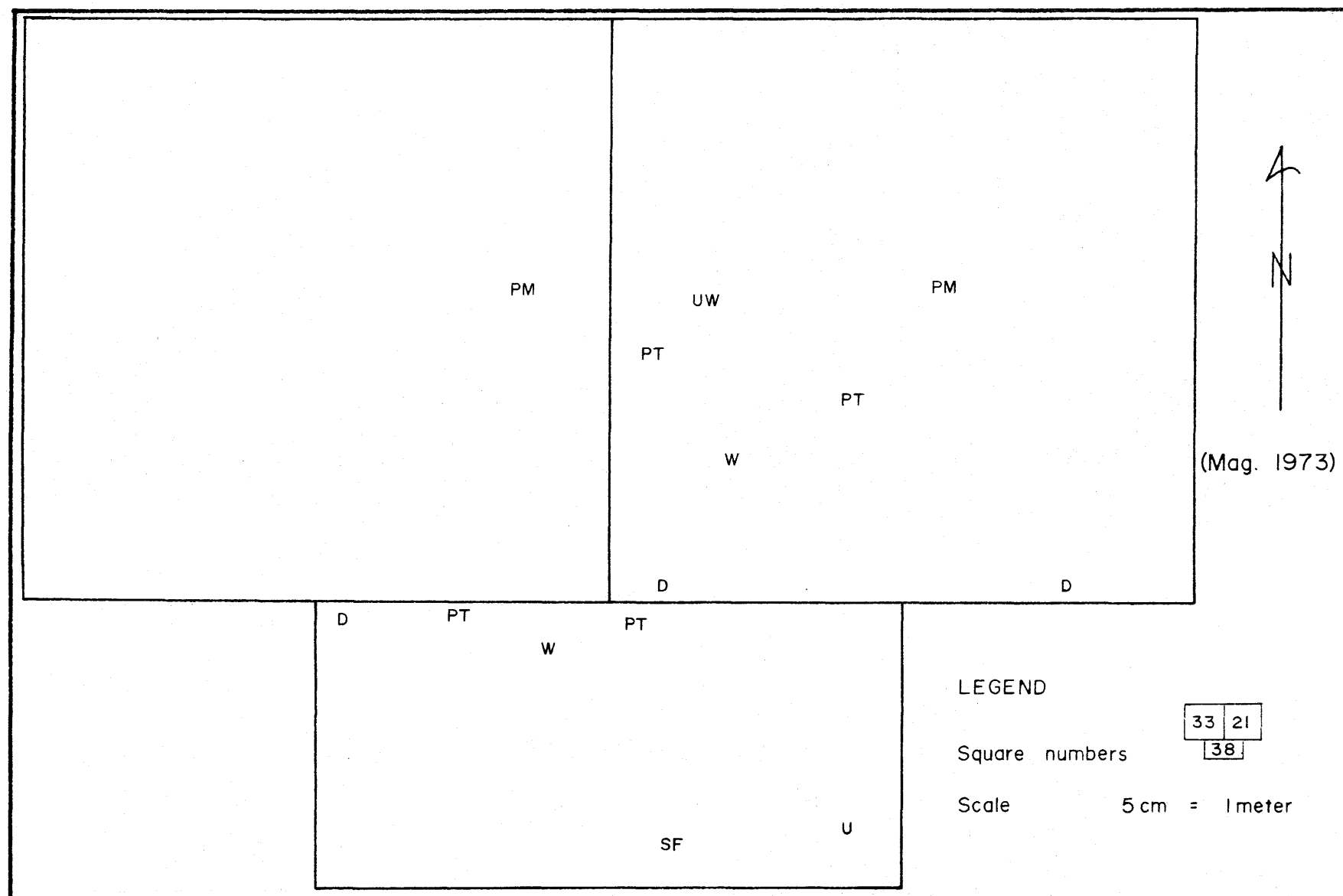


Figure 13. Unit 3 - Projected activity area

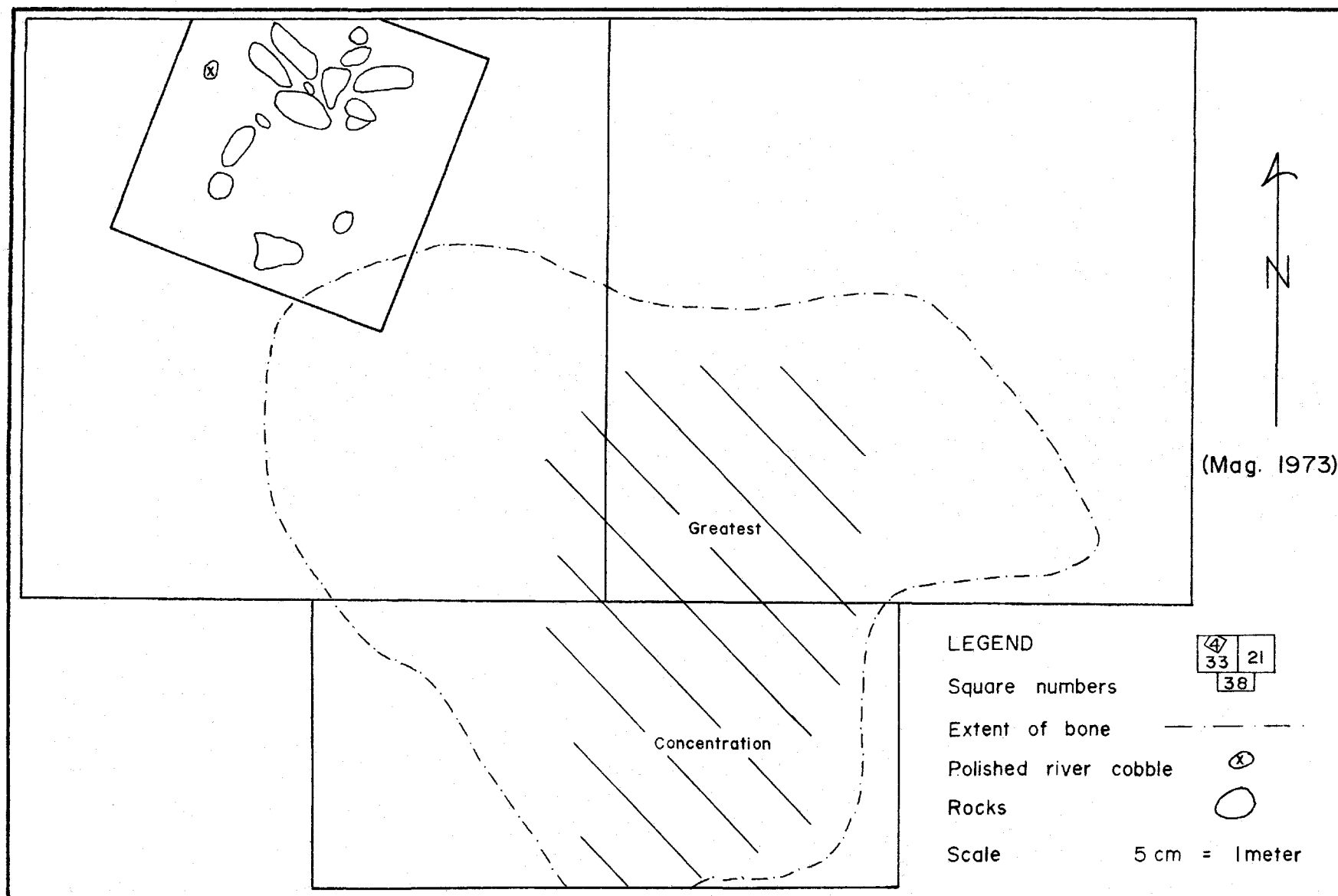


Figure 14. Unit 3 - Scattered hearth and roasting pit

on the southeast side of the hearth. Cultural remains close to the hearth were limited and the majority were not as deep as the feature. One large river cobble, which had been ground or polished on 1 face and side, was recovered just west of the hearth. The majority of cultural materials consisted of a large concentration of quartzite flakes and chips which were recovered during the excavation of square #10. Tiny quartzite flakes and chips were also recovered around the rocks and just north of the circle. It is suggested that this hearth circle was used primarily in the heat treatment of quartzite materials. The possibility that quartzite was heat treated before it was fashioned into implements has also been suggested by Noble (1971: 104) for sites in the central District of MacKenzie.

(4) Excavations extending from this hearth uncovered a second hearth area which consists of a large concentration of fragmented calcine bone (Fig. 14). The complete extent of the bone covered an area of approximately 3 - 4 square meters. However, the bone in much of this area was sparse and widely distributed and only ranged in depth from approximately 10 - 20 cm below the surface. It was some of this bone which had been noticed close to the scattered hearth in the northern part of square #33. The heaviest concentration of bone was found in the southwest of square #21 and the northeast of square #38. This main concentration had a horizontal spread of 180 X 100 cm and ranged from approximately 20 - 42 cm below the surface. This area was



not associated with any rock formation but a considerable number of small pieces of quartz were evenly distributed throughout the main concentration. Although a 10 cm balk divided this main concentration of bone, no formations or pit outlines were visible in the profile. All that was apparent were random specks of charcoal and black and reddish stained patches of sand. Faunal identification revealed only that some of the remains were those of small mammals and fish.

It is suggested that the hearth circle and bone concentration are 2 separate activity areas. While the 2 may relate to the same occupation they do not appear to relate to the same activity. The upper level of the bone may have been disturbed by a later occupation resulting in the thin layer of bone that extends as far as the hearth circle. This large concentration of bone appears to represent the remains of a large roasting pit, while the hearth may have been used primarily in the process of lithic manufacture.

It is of interest to note that the greatest extent of bone generally corresponds with the artifact spread outlined in Figure 13. It is possible that either the artifacts are associated with a later activity which disturbed the upper reaches of the roasting pit or these artifacts are related in some way to the bone concentration. Considering the types of artifacts recovered from this area, it is suggested that the point tips and fragments may have been imbedded in animals that were roasted in this large hearth. The wedges, denticulates and unifacial edge tool may have functioned as

knives and rough cutting tools either before or after the roasting occurred.

#### Unit 4:

The area under consideration in this unit is square #16. The 3 small squares adjoining this square were excavated with little control in 1972 and it is not possible to adequately analyze the limited artifacts which were recovered. Stricter controls concerning vertical and horizontal co-ordinates were utilized for square #16 and the results are outlined below.

During excavation it was noted that the west half of the square produced considerably more cultural materials than the eastern half. This division in the cultural remains appeared to coincide with a configuration of 3 large stones (Fig. 15). The diagnostic artifacts within this square consist of 3 end scrapers, 1 end and side scraper, 1 late Chipewyan corner-notched point base and 1 point tip. Three of the scrapers were clustered closely and suggest a storage area. All of these artifacts ranged from 8 - 12 cm below the surface and appeared closely associated with the rocks. No other significant groupings of stones or artifacts were noted. It is suggested that this area represents the undisturbed edge of an occupation.

#### Unit 5:

The squares within this unit consist of #67, #64 and the west half of #22 (Fig. 16). A wide range and variety of diagnostic artifacts were recovered from these squares and are tentatively divided into groups on the basis of

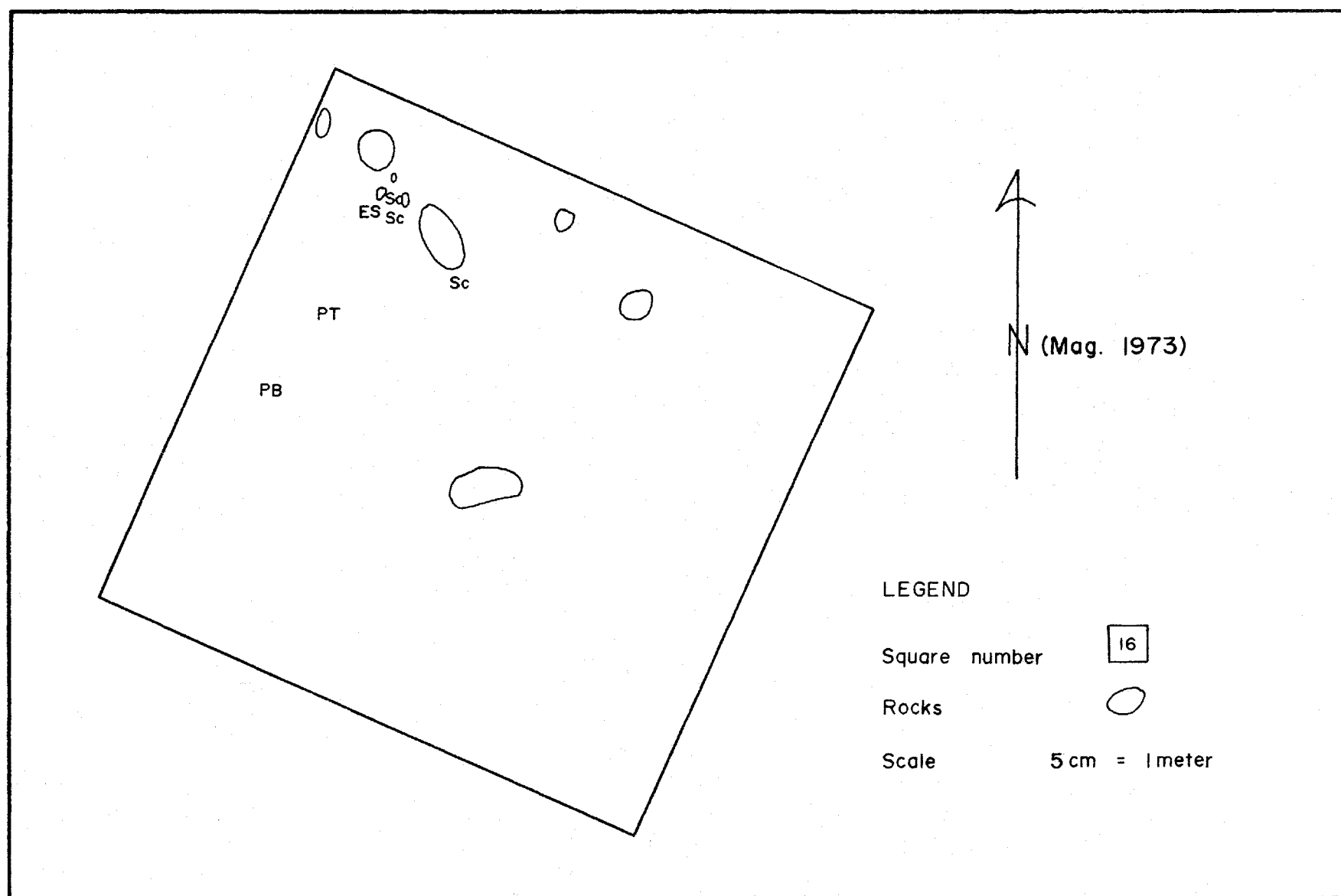


Figure 15. Unit 4 - Edge of occupation

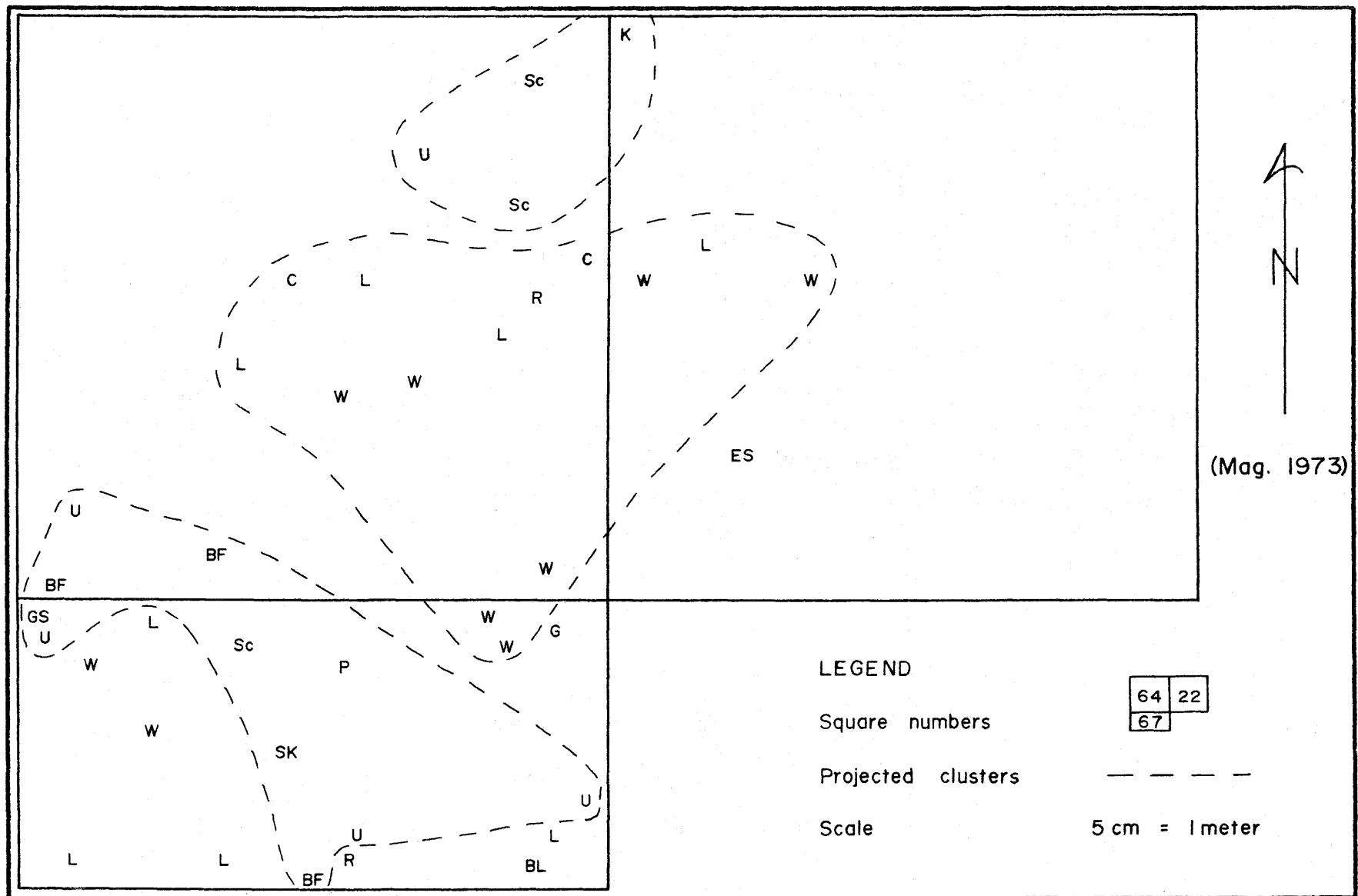


Figure 16. Unit 5 - Projected activity areas

horizontal artifact clustering. Vertically there is little distinction between the groups and all artifacts range from 3 - 15 cm below the surface. A number of artifacts appear to be miscellaneous and not associated with any of the tentative groupings.

(1) The first group is poorly defined and tentatively includes 3 biface fragments, 3 unifacial edge tools, 1 end scraper, 1 Chipewyan corner-removed point, 1 spokeshave and 1 ground stone bi-point. Certainly the clustering of bifacial and unifacial tools appears to be significant but there is no real evidence to suggest that all of these artifacts are related to 1 activity area. No probable activity has been suggested for this group.

(2) The second artifact grouping consists of 7 wedges, 3 cores and 4 large lumps of quartz. The artifacts within this group appear to be spatially distinct and are spread over an irregular area that measures approximately 200 X 140 cm. Possibly included in this group are 2 wedges, 2 cores and 4 large lumps of quartz located in square #67. This additional material would result in a very extensive activity area which may have been caused through spreading and mixing by later occupations. It is suggested that the first clustering of artifacts and possibly the second are all associated and relate to the working and manufacture of lithic materials.

(3) The third group consists of a small cluster in the northeast of square #64 and the extreme northwest of square #22

which appear to be spatially distinct from other similar artifact types. The artifacts in this area consist of 2 end scrapers, 1 unifacial edge tool and 1 asymmetrical hafted knife. All are located within 90 cm of each other and range from 5 - 12 cm below the surface. This group is possibly related in some way to a hide working activity.

Unit 6:

The squares within this unit consist of the east half of #22, the southeast of #37 and all of #30 and #42 (Fig. 17). At least 3 and probably 4 activity areas have been outlined. Again a number of miscellaneous artifacts occur which are not tied to the apparent artifact clusters.

(1) The first group of artifacts were recovered within the northeast portion of square #22. This group is made up of 4 end scrapers and 2 unifacial tools. All are located within 100 cm of each other and range in depth from 7 - 15 cm below the surface. The artifacts may have been associated with some aspect of hide working.

(2) The second grouping is similar to the first and is located mainly in square #42. This group is made up of 7 end scrapers and 2 unifacial edge tools. All are located within 160 cm of each other and range from 9 - 16 cm below the surface. As with the first group, these artifacts are thought to be associated with a hide working activity. It is possible that these 2 groups are associated with one another. Both coincide in vertical depth and it is feasible that both may represent 1 working area.

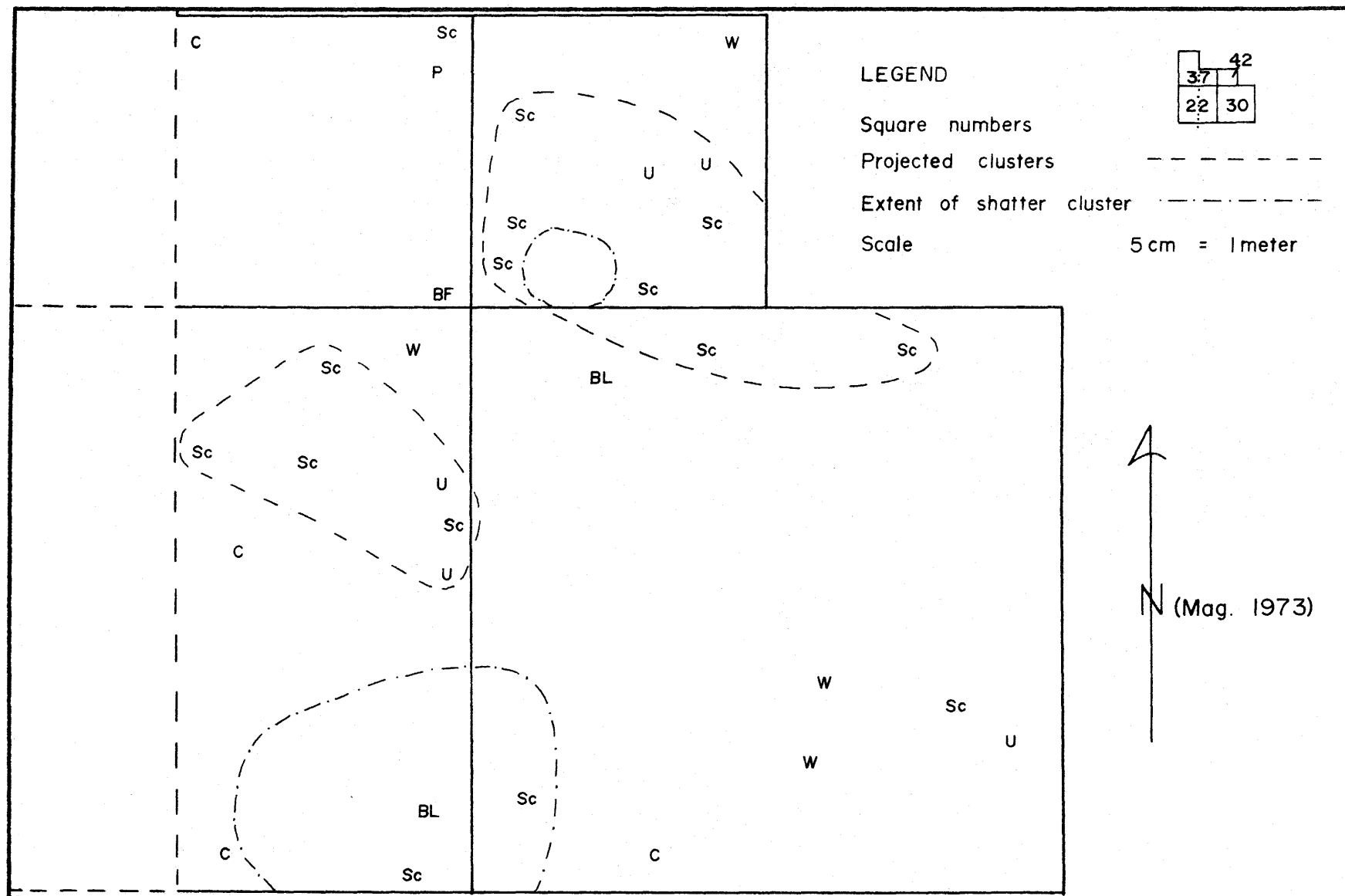


Figure 17. Unit 6 - Projected activity areas

(3) The third group consists of a large quantity of quartz detritus (approximately 300 pieces) which was concentrated in the southeast of square #22 and the southwest of square #30. The material covered an area of approximately 60 X 90 cm and ranged from 3 - 6 cm below the surface. It is suggested that this concentration constitutes a chipping station for the manufacture of implements. One blade-like core was recovered directly within the detritus cluster while 2 cobble cores were located nearby. All of the cores were of depths which closely correspond with the detritus and it is suggested that the cores and detritus are associated.

(4) Another probable chipping station, this time smaller and containing quartzite detritus, was located in the southwest of square #42. Approximately 30 pieces, all of the same kind of quartzite, covered a radius of 20 cm and ranged in depth from 11 - 12 cm below the surface. The shatter, which consists of fine flakes and chips, suggests secondary retouching of a quartzite implement or blank. Although a core was recovered 23 cm to the south of the feature, it is made of quartz and not considered to be associated with the chipping station.

#### Unit 7:

Squares #35, #40 and the north and west of #37 will not be analyzed for activity areas due to the large extent of disturbance throughout the squares. In square #29, historic occupation has disturbed the first 12 cm of the square. However, since below 12 cm was undisturbed, the results for



this lower portion of the square are outlined below.

In the northeast portion of the square there appeared to be a stratigraphic break of about 5 - 6 cm between the cultural material disturbed by historic occupation and that which was lower. The upper level extended from 2 - 13 cm below the surface and the lower level extended from 19 - 28 cm below the surface. This gap was not apparent throughout the other parts of square #29 and occurred only in the northeast quadrant.

Excavation of the lower portion of this square did not result in many diagnostic artifacts but did expose the remains of a hearth circle (Fig. 18). The hearth was made up of 6 stones shaped in a rough semi-circle. The extent of the whole feature was 75 X 40 cm and the stones ranged in depth from 21 - 32 cm below the surface. A number of other rocks were also located at this depth and may be associated with this feature. There was no bone or charcoal associated directly with the hearth, although small patches of burnt bone were noticed about 5 cm above the hearth level. It is important however, to note that large concentrations of quartzite chips and flakes were uncovered southwest of the hearth circle. The quartzite materials (approximately 130 pieces) covered an area of 60 X 80 cm and ranged from 19 - 21 cm below the surface. These remains appear to be associated with the hearth and suggest that the primary purpose of the hearth was for heat treatment of lithic materials prior to, or during, the chipping process. Two

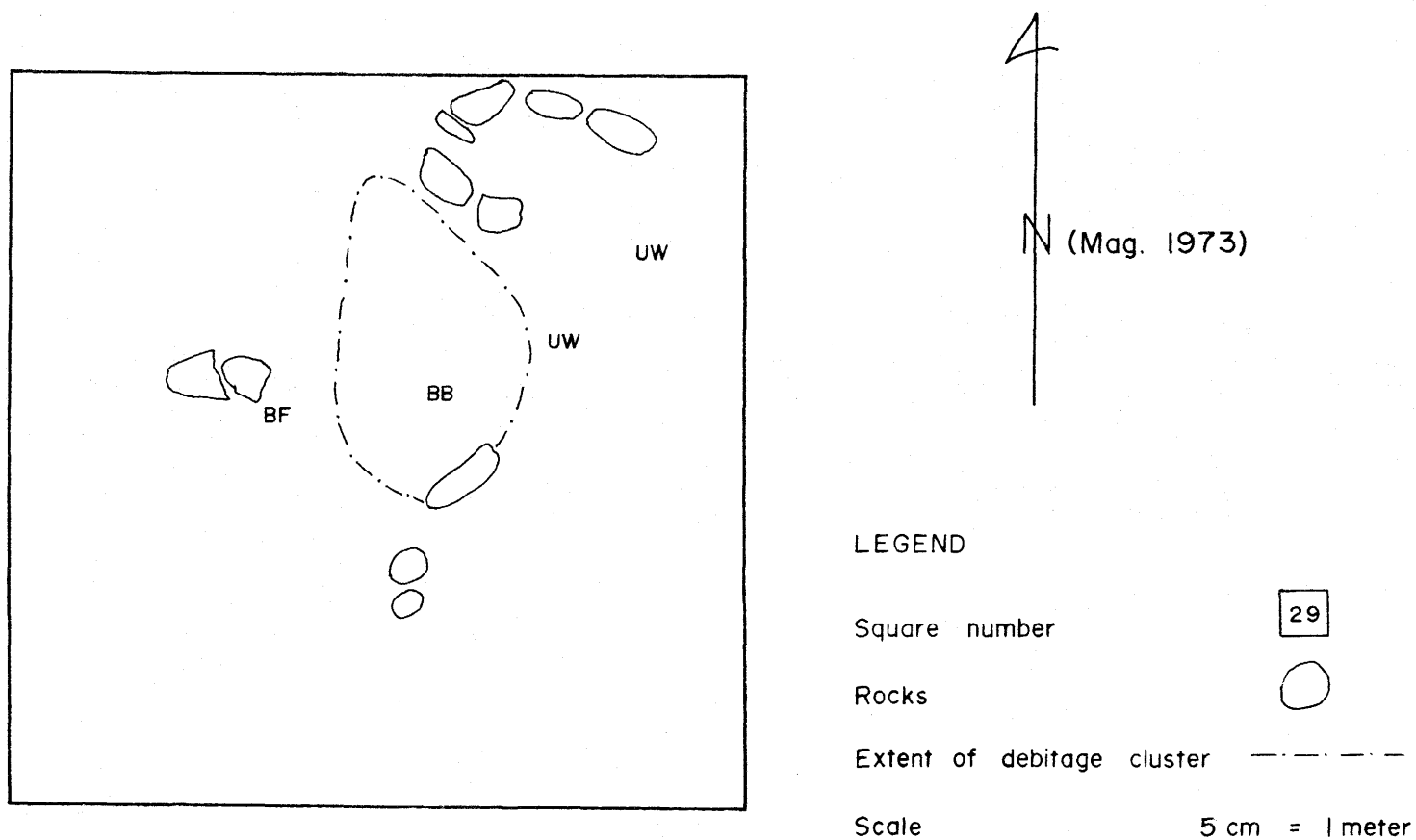


Figure 18. Unit 7 - Scattered hearth

bifacially worked fragments and 2 pieces of shatter with use wear along 1 edge may also be associated with this area.

Squares #36, #41 and #32 are not actually part of the block but are close enough to be included in those results. The material from these squares was limited and concentrated between 3 - 20 cm below the surface. No significant clustering of cultural materials or stones was apparent except possibly in squares #36 and #41, where 3 of the 4 spokeshaves recovered from IhNh 2 were found. These implements were widely dispersed over an area of 3 square meters and may have been spread by later occupations.

### 8.3 Sample analysis

Due to the small areas exposed and the limited cultural remains recovered through the sampling excavations, analysis for evidence of significant clusterings was largely unproductive. Cultural remains from all of the squares were less concentrated and the majority were recovered from 2 - 10 cm below the surface. Occasionally an excavation unit would produce a large number of specimens from 1 artifact class (eg. 4 scrapers or 3 unifacial edge tools) which suggests evidence of an activity area. This occurred rarely throughout the site and the excavation units were never large enough to permit the outlining of activity areas.

One feature, a scattered hearth, was uncovered in square #23 on the eastern end of the site. The hearth consisted of a rough circle of about 28 rocks (Fig. 19). The hearth area

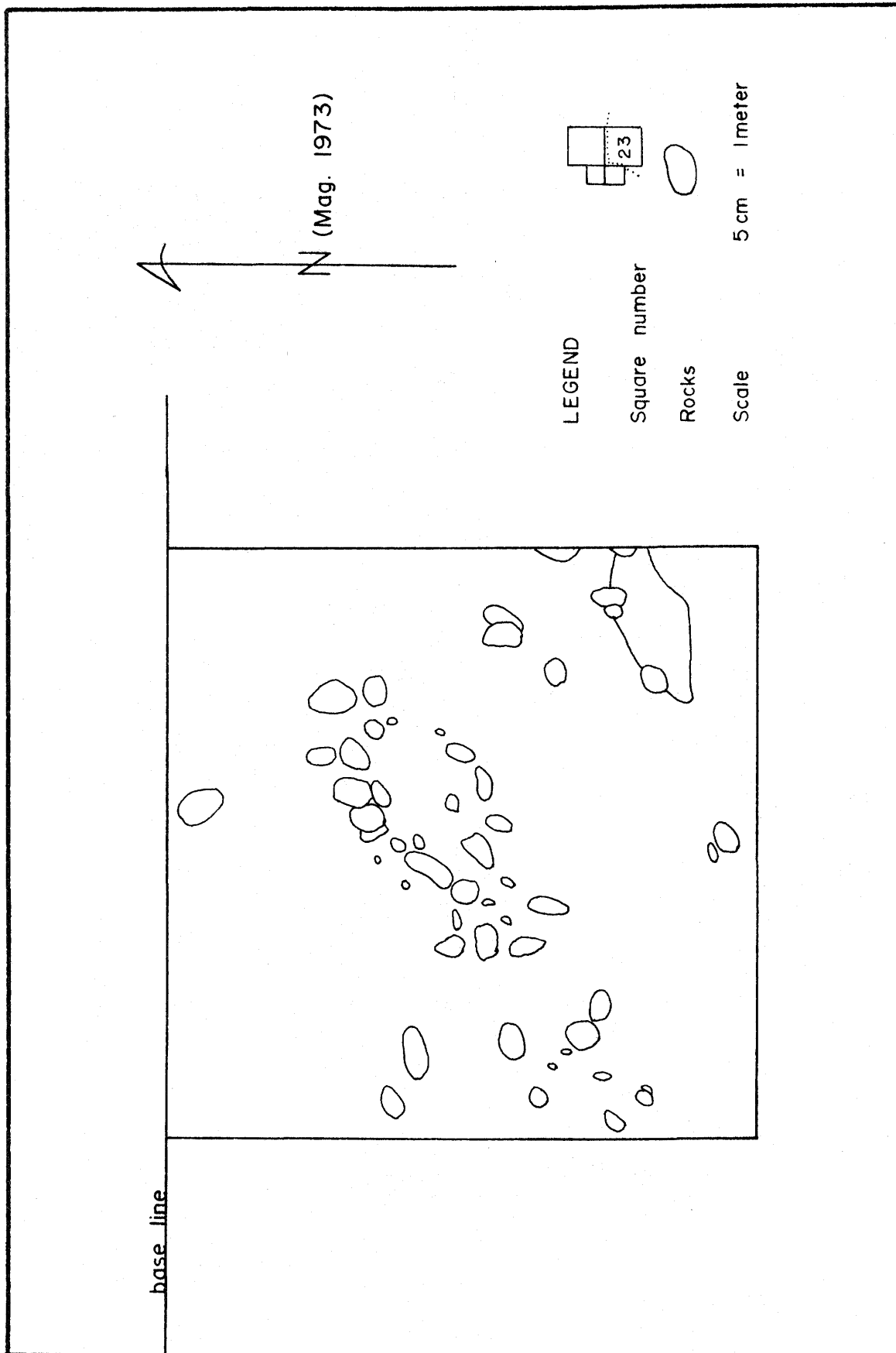


Figure 19. Sample analysis - Scattered hearth

from within the rocks measured approximately 25 X 50 cm and the rocks ranged from 2 - 11 cm below the surface. A variety of other rocks were scattered throughout the square and may have at one time been associated with the feature. No charcoal was evident but a small patch of fragmented calcine bone was uncovered just outside of the rocks. One piece was identified as an antler tine tip, probably from a barren-ground caribou. A high percentage of quartzite flakes and chips were recovered around the hearth and at least one purpose of this feature may have been for heat treating lithic materials.

This hearth and the limited numbers of diagnostic artifacts and shatter appear to be the result of a single occupation. The diagnostic artifacts, which consist of 3 end scrapers, 2 unifacial edge tools and a possible point tip, were all located to the north and west of the hearth. Most of these materials were recovered during the 1972 preliminary test excavations and, as the exact horizontal co-ordinates are not known, cannot be accurately plotted or analyzed.

#### 8.4 Conclusions

Evidence presented throughout this chapter suggests that it is possible to outline activity areas on the basis of artifact groupings. To begin with the most basic clustering appears to occur within each formal artifact class. For instance, in 6 separate instances, scrapers tend to occur with other scrapers in groups ranging from 2 to 7

implements. This also occurs within the other major artifact classes and is apparent to a varying degree for groups of unifacial tools, bifacial tools, wedges, projectile point fragments, cores and spokeshaves. Although varieties co-occur, there is no particular clustering of specific dimensions within these groups. This is most apparent in the scraper class, where a variety of scrapers exhibiting a wide range of formal and metrical dimensions often co-occur. This is also apparent within the flake clusters where positive, flat and negative bulb flakes occur in almost even numbers and are not spatially distinct.

After these basic groups are outlined it becomes apparent that some of them tend to co-occur with others. The most obvious case for this is the continual clustering of scrapers and unifacial edge tools and in 2 instances, asymmetrical hafted knives. More limited in nature is the association between cores, large lumps of quartz and wedges. It is of interest that the wedges, which are thought to function as burins and general scraping and cutting tools, seem to be at least partially associated with cores and lumps of quartz. It is possible that these implements do represent blank forms or a variety of core as has been suggested.

The consistent clustering of these classes of artifacts suggests that it is possible to differentiate activities, as well as to outline and determine the actual activity area. This has been successful to a certain extent with the materials from IhNh 2. Analysis of the cultural remains

has clearly outlined areas which are thought to represent stone working and hearth related activities. The consistent clustering of scrapers and unifacial edge tools may represent a hide working area or some other unidentified activity. Some of these areas appear to have been disturbed by later activities but, in general, are still clearly identifiable. As yet these are the only activities and tentative tool kits which can be identified for this site. While other classes of artifacts and other artifact groupings do occur the clustering is not consistent.

Further excavation concerned specifically with the problem of human patterning is necessary to validate the above activity areas and to delineate others which must surely occur. This is not to suggest that these tentative activity related tool kits will occur repeatedly in other sites. The kits may vary due to a slightly, or even completely, different activity, or may be more or less complete as a result of differential preservation. A site focussing on a different subsistence dependency may evidence quite different activities than were apparent at IhNh 2. While similar types of artifacts may be used, different groupings of these artifacts may occur as a result of varying types of activities. Many of the tool types are probably multi-purpose in nature and function easily within a wide range of activities. The activities and tentative tool kits outlined for IhNh 2 may be representative of winter occupation by the Chipewyan and may not occur, or at least not in the

same frequencies, at summer sites or along caribou migration routes.

Analysis of the cultural remains at IhNh 2 has attempted to identify cultural patterning within a wide array of material remains. Although this patterning is at times tentative, it appears to be possible to identify some of the differential clusters within the site. These activities and associated tool kits are merely suggested activities and further research culminating in testing by independent data is necessary in order for these areas to achieve validity.

An approach concerned with the cultural patterning of material remains is considered to be useful for sites where structural remains and individual occupations can not be determined. The use of strict vertical and horizontal controls, although more time consuming, may increase the interpretive value of a body of data. It is suggested that this type of analysis at a variety of Chipewyan sites will result in the delineation of activity areas and tool kits which reflect different seasonal adaptations. A greater understanding of cultural patterning will in turn, result in a greater understanding of prehistoric Chipewyan cultures and the various systems and subsystems within these cultures.



## 9. PROBLEMS AND HYPOTHESES

Throughout the field and laboratory research connected with the archaeology project at Black Lake, a number of problems and hypotheses have become apparent which may be of value to future investigations in northern Saskatchewan. These few general suggestions, which are listed briefly in point form, are in no way thought to cover the full range of potential problems which could be tackled, or hypotheses which could be tested, by future studies in the area.

### Problems:

1)- The prehistoric sites at Black Lake tended to cluster at specific locations. Future archaeological studies may be able to determine the type and season of occupation at these sites.

2)- The occurrence of northern plains and woodland materials indicates considerable movement to the Black Lake area by more southern related peoples. Future studies may be concerned with a) the determination of the nature and seasonal period of these occupations and b) the determination of the directionality of these movements and incursions.

3)- A large and widely varying number of historic Chipewyan burial structures, which may cover a temporal span of at least 100 years, were evident at Black Lake. Studies of the form, design, structure, decoration etc. may indicate a series of stylistic modes in historic Chipewyan burial patterns.

Hypotheses:

1)- The hypothesis concerned with discrete herd/discrete band relationships formulated by Smith and elaborated upon by Gordon is applicable, at least for the prehistoric and historic Chipewyan occupation, to the Black Lake area of northern Saskatchewan. Areas of traditional Chipewyan occupation in far northern Saskatchewan are associated with winter occupations dependent upon wintering herds of barren-ground caribou.

2)- Artifacts within undisturbed Chipewyan sites in northern Saskatchewan form patterns which evidence differential activity areas and associated tool kits. These activities relate to the seasonal adaptation of the Chipewyan occupants and are associated with the activities of a winter camp.

3)- As activities vary throughout the seasonal cycle of the band/herd relationship, numbers and types of tools associated with different activities will also vary. By way of example, activities at a campsite in late summer concerned primarily with fulfilling the year's hide requirements will be markedly different from activities at a site concerned with killing large numbers of migrating caribou or activities associated with a winter camp. While the artifacts themselves will not vary, the numbers, associations and tool kits will.

### PART III UNANALYZED ARTIFACT DATA

The purpose of Part III is simply to present some relevant dimensions and attributes of certain artifacts which may be of interest to other researchers. The cultural materials on the following pages have been utilized in the culture history approach of Chapter 4, but the dimensions of these materials were not itemized. None of the artifacts in this section are from IhNh 2, since all of the material remains from that site have been described and analyzed in Part II of the thesis. Abbreviations have been used on the attribute sheets and a key to these symbols is listed below in Table 6. All measurements are in millimeters.

Table 6 - Key to the symbols shown on the attribute sheets

C	-Complete	R	-Right
TM	-Tip missing	Le	-Left
LSM	-Left shoulder missing	SCo	-Sub-convex
Qu	-Quartzite	SC	-Sub-concave
Ch	-Chert	St	-Straight
P	-Present	Ir	-Irregular
NP	-Not present	OAS	-Obtuse angle, sharp
L	-Light	DRB	-Deep, rounded, broad
M	-Moderate	DRN	-Deep, rounded, narrow
H	-Heavy	CN	-Corner-notched
Th	-Thinned	SN	-Side-notched
Gr	-Ground	I	-Indeterminate due to breakage

Lanceolate Projectile Points:

Plate #	1:1	1:4	1:3	1:2	2:1	1:11
Site and artifact #	IhNh 10:1:5	IhNh 10:1:1	IhNh 10:4:5	IhN1 1:1	IgNj 2:13	IgNj 1:5
Completeness of form	Base	Base	C	TM	C	C
Point type	Agate Basin	?	?	?	Hennessey	Eastern Triangular
Material	Qu	Ch	Ch	Qu	Qu	Qu
Base shape	St	St	IrSt	SC	SCo	IrSt
Modification of base - Th - Gr	P PL	P PH	P PL	P NP	P PL	P NP
Lateral grinding - R - Le	PH PL	PM PH	NP PL	NP NP	PM PM	NP NP
Length	I	I	32.6	To Break 31.0	61.6	21.8
Maximum width	At Break 23.1	At Break 20.5	15.0	15.3	32.6	19.0
Width of base	13.3	17.1	10.2	6.5	27.5	17.0
Maximum thickness	I	I	5.0	6.2	9.3	4.1

Notched Projectile Points:

Plate #	1:7	1:8
Site and artifact #	IgnJ 11:80	Ign1 6:158
Completeness of form	LSM	LSM
Point type	Pelican Lake	Northern Plains
Material	Qu	Qu
Shoulder shape - R	Barbed sharp	OAS
- Le	I	I
Notch form - R	DRB	DRB
- Le	DRB	DRN
Base shape	IrSt	SC
Stem shape	CN	CN
Modification of base - Th	Partly	P
- Gr	NP	PH
Grinding of notches	PL	PM
Length	42.6	41.8
Shoulder to base	9.1	11.0
Length of stem	8.1	10.3
Maximum width	At shoulder break 19.7	At shoulder break 26.7
Width of stem	8.6	14.7
Width of base	10.4	18.2
Maximum thickness	7.8	6.2
Depth of notches - R	3.9	5.3
- Le	5.3	6.3
Length of notch opening - R	6.5	7.1
- Le	At break 6.8	At break 6.3

Clearwater Lake Punctate Vessel Fragment:

Plate: #3

Site: IgNj 4

Sherds: rim - 7  
body - 14

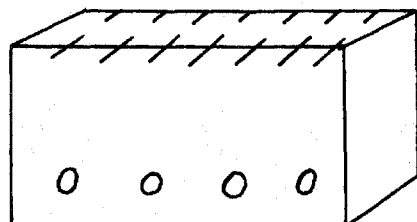
Temper: type - crushed quartz and granite  
size - large (range 0.5 to 4.8 mm)

Texture: type - coarse

Surface finish: exterior - fabric impressed  
interior - smoothed

Decoration: lip - interior and exterior lip edges incised  
obliquely by a cord wrapped stick  
rim - circular to elongated punctates leaving  
pronounced interior bosses

Rim decoration:



Rim cross-section



Vessel form: lip - flattened  
rim - wider at lip, narrowing towards neck  
neck - wide angle curve to shoulder

Metrics:

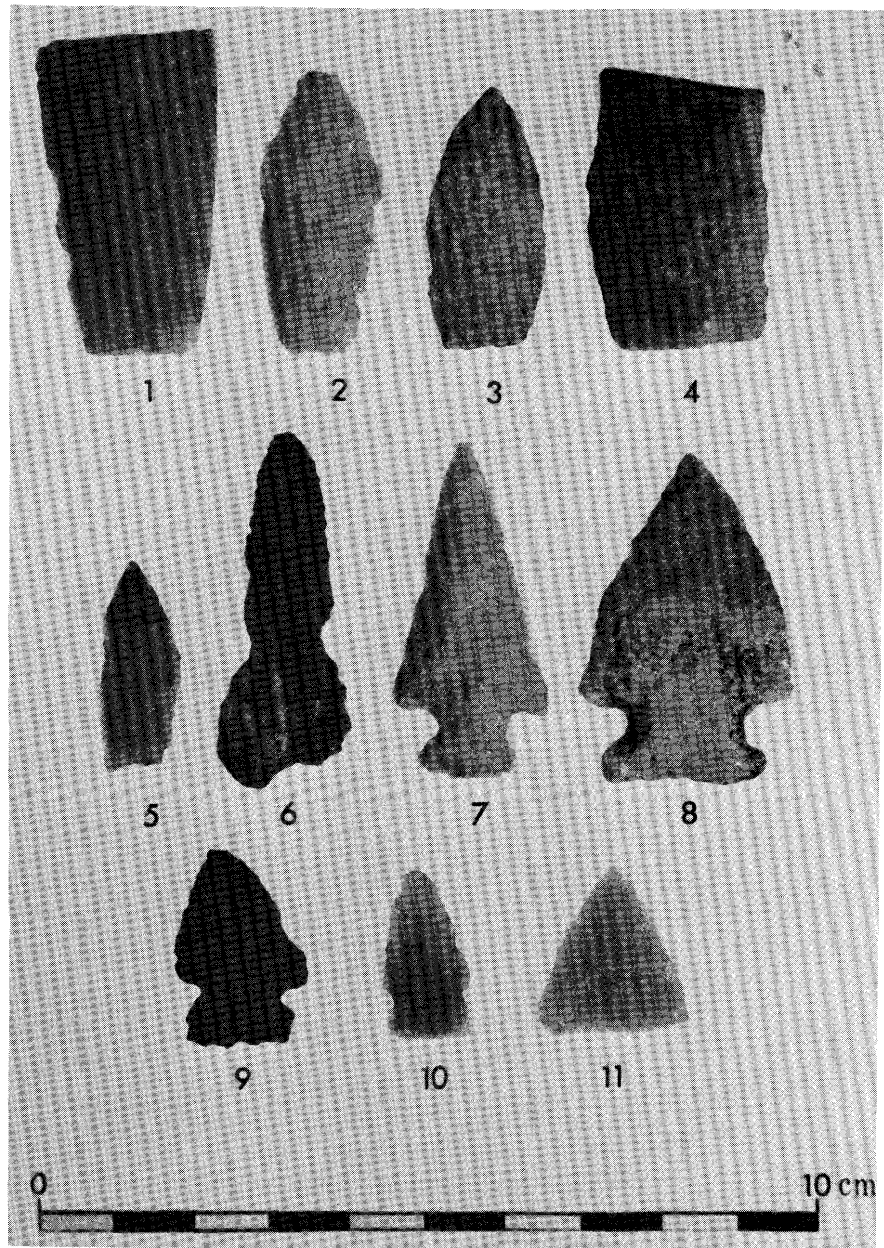
Thickness: lip - 6.4 mm  
neck - 4.8 mm  
shoulder - 3.4 mm

Punctates:

distance between outside edges - 7.2 to 8.3 mm  
distance of upper edge from lip - 13.6 to 17.1 mm  
size: height - 2.9 to 4.1 mm  
width - 2.4 to 3.4 mm

Plate 1. Projectile points from Black Lake

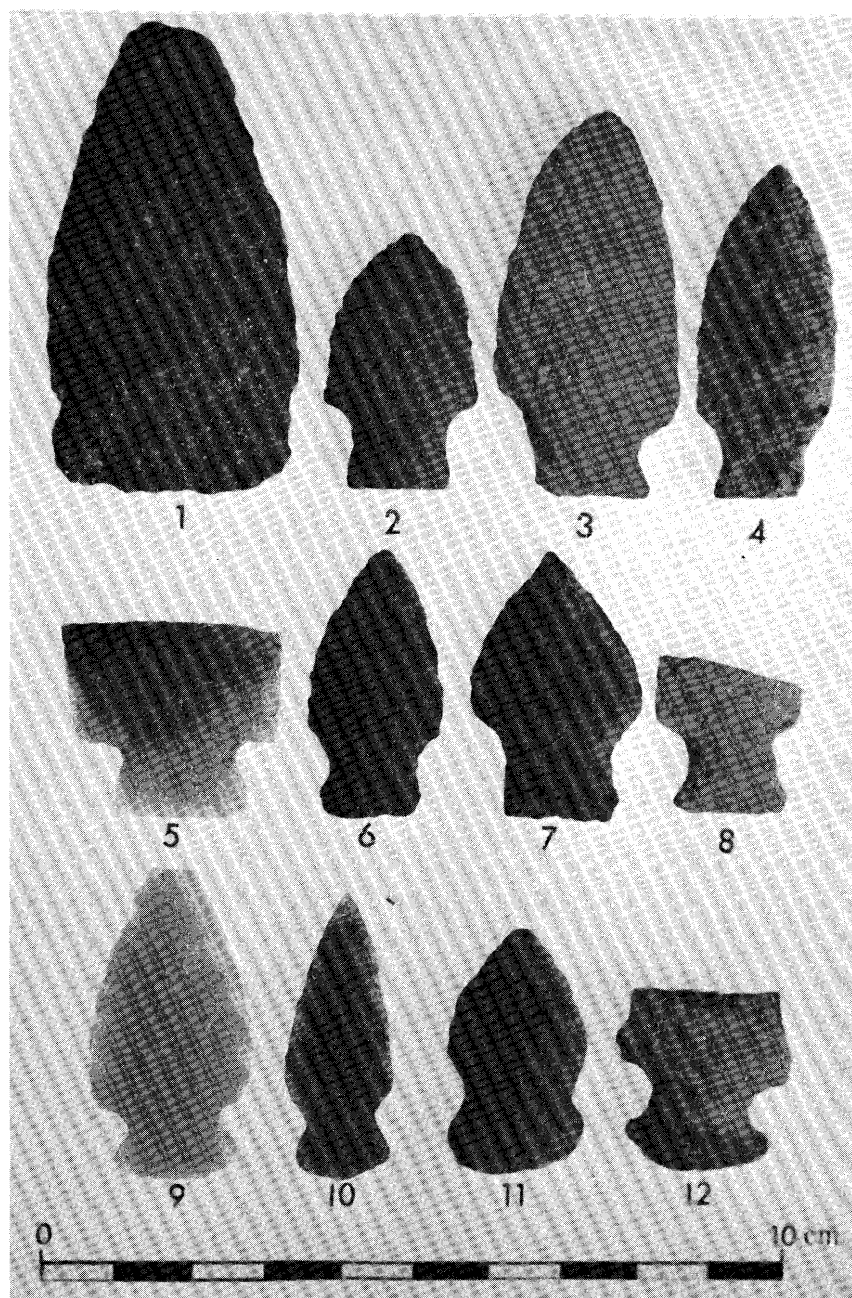
1. Agate Basin basal fragment from IhNh 10
2. Unidentified lanceolate point from IhN1 1
3. Unidentified lanceolate point from IhNh 10
4. Unidentified lanceolate basal fragment from IhNh 10
5. Arctic Small Tool tradition end blade from IhNh 2
6. Unifacially worked microblade from IhNj 6
7. Pelican Lake projectile point from IgNj 11
8. Corner-notched projectile point from IgN1 6
9. Prairie Side-notched projectile point from IhNh 2
10. Prairie Side-notched projectile point from IhNh 2
11. Eastern Triangular projectile point from IgNj 1





**Plate 2. Projectile points from Black Lake**

1. Hennessey projectile point from IgNj 2
- 2 - 8. Corner-removed and side-notched points of the Frank Channel complex from IhNh 2
- 9 - 12. Side-notched, convex base points which may represent a regional variant of the Frank Channel complex. Number 9 is from IgNj 1, numbers 10 - 12 are from IhNh 2



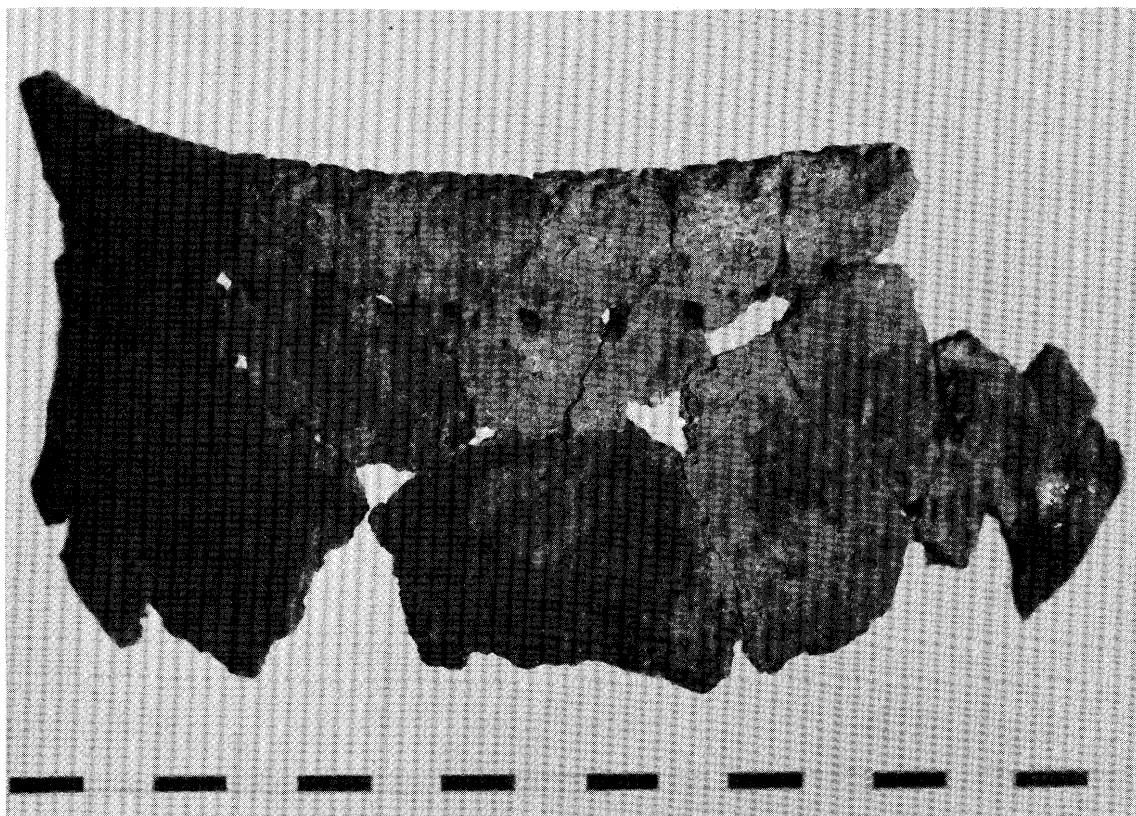
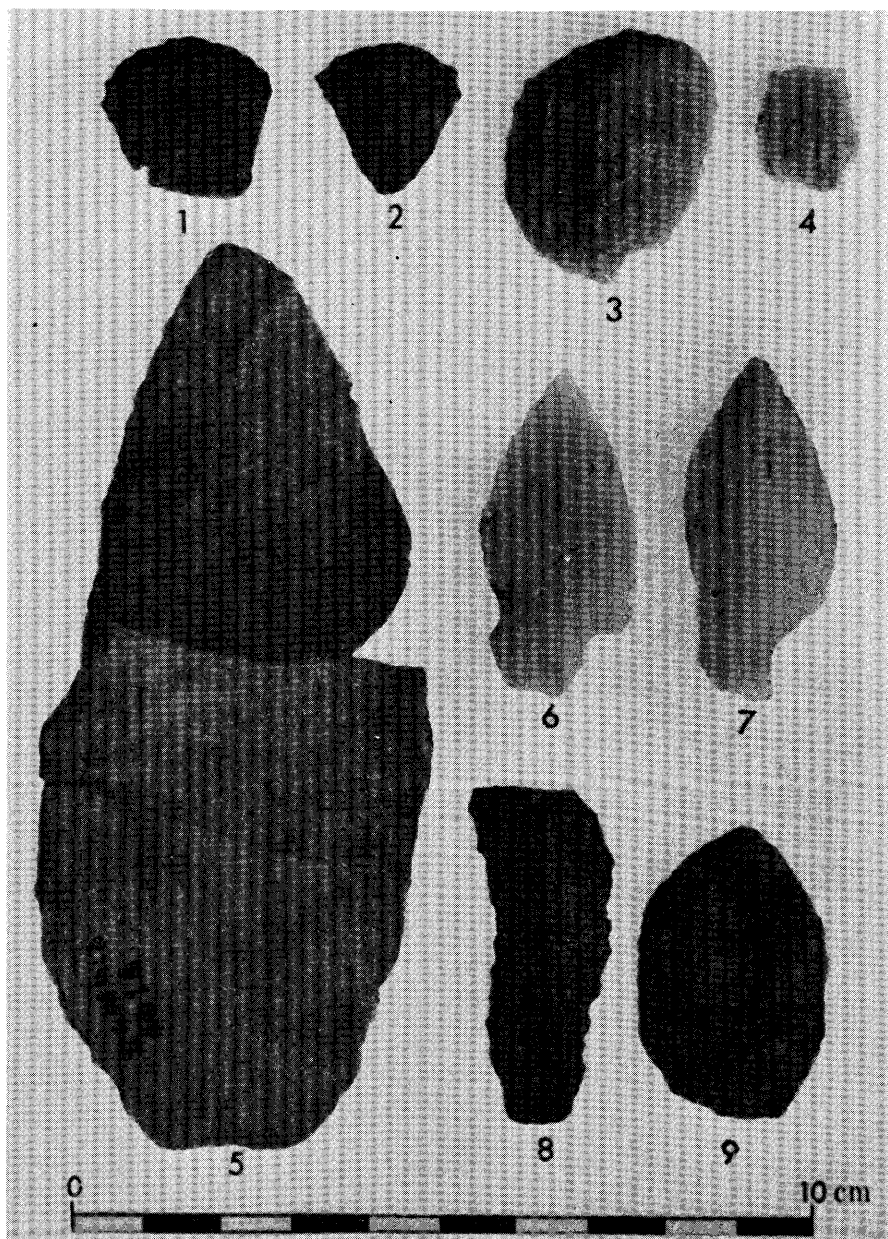


Plate 3. Clearwater Lake Punctate vessel fragment from IgNj 4

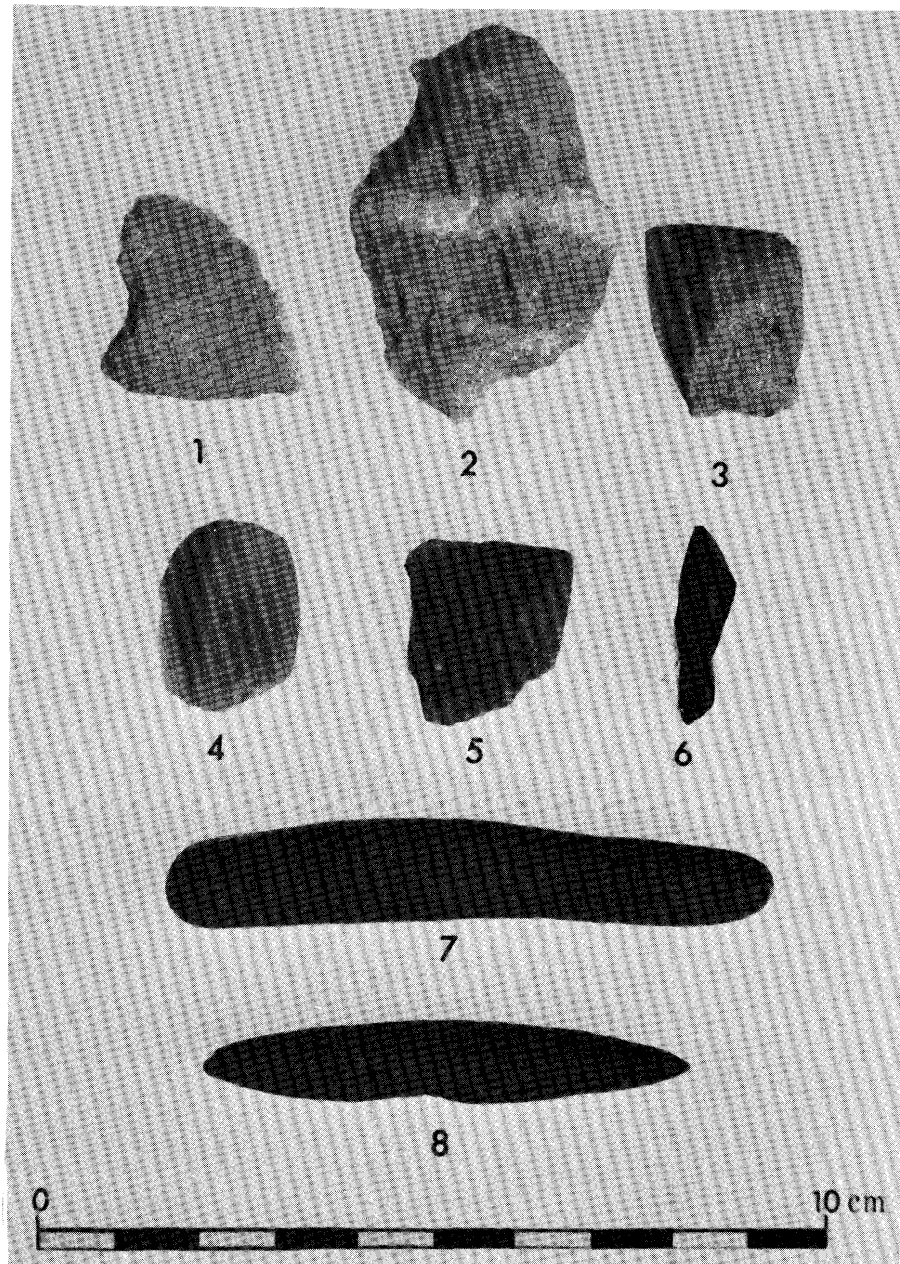
**Plate 4. Miscellaneous artifacts from IhNh 2**

- 1 - 2. End scrapers
- 3. End and side scraper
- 4. Side scraper
- 5. Biface
- 6 - 7. Hafted knives
- 8 - 9. Unifacial edge tools



**Plate 5. Miscellaneous artifacts from IhNh 2**

- 1 - 2. Spokeshaves**
- 3 - 5. Wedges**
- 6. Graver**
- 7. Notched stone**
- 8. Ground stone bi-point**



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